Olin
3855 North Ocoee Street
Suite 200
Cleveland, TN 37312
(423) 336-4007
cmrichards@olin.com

December 15, 2015

Mr. Keith Glenn
Removal Action Branch
U. S. Environmental Protection Agency, Region II
2890 Woodbridge Avenue, Bldg. 205 (MS-211)
Edison, New Jersey 08837

Re: Response to Request for Information Pursuant to section 104 of CERCLA
Niagara Town Garage Site, Niagara, Niagara County, New York

Dear Mr. Glenn:

Enclosed is Olin's response to the USEPA Request for Information regarding the Niagara Town Garage Site, Niagara, Niagara County, New York.

Olin has reviewed our files in regard to the Niagara Town Garage Site. After a diligent investigation, Olin has not located any evidence that any Olin facility has conducted any disposal at the Site.

If USEPA has additional information regarding Olin's involvement at the Site, please forward to me for review. I am the point of contact for future communications from USEPA regarding this Site.

Very truly yours,

Curtis M Richards

Curtis M. Richards
Corporate Vice President
Environment, Health and Safety

Copy to:
Ms. Margo Ludmer, Esq.
Assistant Regional Counsel
New York/Caribbean Superfund Branch
Office of Regional Counsel
U. S. Environmental Protection Agency, Region II
290 Broadway, 17th Floor
New York, New York 10007

CERTIFICATION OF ANSWERS TO REQUEST FOR INFORMATION

Niagara Town Garage Site, Niagara, Niagara County, New York

State of Tennessee:
County of Bradley:

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document (response to EPA Request for Information) and all documents submitted herewith, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete, and that all documents submitted herewith are complete and authentic unless otherwise indicated. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. I am also aware that I am under a continuing obligation to supplement my response to EPA's Request for Information if any additional information relevant to the maters addressed in EPA's Request for information or my response thereto should become known or available to me.

Curtis M. Richards
NAME (print or type)

Corporate VP, EH&S
TITLE (print or type)

Curtis M Richards
SIGNATURE

Sworn to before me this 15th day of December, 2015.

Beth A. Baltimore
NOTARY PUBLIC

BETH A. BALTIMORE
STATE OF TENNESSEE NOTARY PUBLIC
BRADLEY COUNTY

REQUEST FOR INFORMATION

GENERAL OBJECTIONS

Olin objects to each and every question to the extent it exceeds the authority of the United States Environmental Protection Agency ("USEPA") under the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), insofar as a particular question fails to limit the scope of the inquiry to:

> **1. The identification, nature and quantity of materials which have been or are generated, treated, stored, or disposed of at the Site (as defined in the Request for Information), as provided in CERCLA § 104(e)(2)(A), 42 U.S.C. § 9604(e)(2)(A); or**
> **2. The nature or extent of a release of a hazardous substance or pollutant or contaminant at or from the Site, as provided in CERCLA § 104(e)(2)(B), 42 U.S.C. § 9604(e)(2)(B).**

For each and every question, Olin objects to the definitions and instructions included in the request for information as exceeding the scope of EPA's authority for purposes of a CERCLA sec. 104(e) request.

Olin objects to each question to the extent the question asks for information or documents protected by the attorney-client and/or work-product privileges.

1. Please provide the following information regarding your company.

   a. State the legal name of your company.

      Response:
      Olin Corporation

   b. State the name and address of the president or the chairman of the board, and/or other presiding officers of your company.

      Response:
      Olin Corporation
      190 Carondelet Plaza, Suite 1530
      Clayton, MO 63105
      (EXHIBIT A - List of Olin Corporation Officers)

   c. Identify the state of incorporation of your company and your company's agent for service of process in the state of incorporation and in New York.

      Response:
      State of Incorporation: Commonwealth of Virginia
      Service Of Process Agent in Virginia & New York: CT Corporation

d. Provide a copy of your company's "Certificate of Incorporation" and any amendments thereto.

Response:
(EXHIBIT B - Olin Corporation – Certificate of Incorporation)

e. If your company is a subsidiary or affiliate of another company, or has subsidiaries, or is a successor to another company, identify these related companies. For each related company, describe the relationship to your company and indicate the date and manner in which each relationship was established.

Response:
(EXHIBIT C - Subsidiaries of Olin Corporation)

2. Identify all properties that your company has owned and/or operated within 5 miles of the Site during the years from 1940 to the present. State the address and identify the dates of your company's ownership and/or operation and provide copies of all documents evidencing such ownership and/or operation, including but not limited to purchase and sale agreements, deeds, leases, etc. Provide a detailed description of the operations, processes, or business activities your company conducted at each property.

Response:
Olin objects to providing copies of "all documents" evidencing ownership and/or operation of these properties, because such documents would be extremely voluminous and duplicative, and the burden of producing such documents is not justified in light of the undisputed facts disclosed herein concerning Olin's past ownership and operation of the properties. Subject to this objection, Olin states:

102nd Street Landfill: Buffalo Ave., Niagara Falls, NY:
6.5 Acres owned by Olin from 1948 to present (purchased from Jacob Pierce and C. Edgar Allen); 9.1 acres owned by Occidental Chemical Corporation (OCC). Site used as landfill from 1948 to 1970. Landfill closed in 1970.
***(EXHIBIT D - Pages from July 1990, Remedial Investigation Final Report, Volume 1 – Text, 102nd Street Landfill Site*; additional pages omitted due to excessive volume and lack of relevance to question).**

Charles Gibson (a.k.a. Pine and Tuscarora): 8700 Pine Ave., Niagara Falls, NY:
Owned by Olin from 1987 to present (purchased from Mr. & Mrs. Batrouny). In November 1957 Olin deposited hexachlorobenzene (HCB) and hexachlorocyclohexane (HCH) cake at the Site.
***(EXHIBIT E - Pages from March 1987, Feasibility Study Report, Gibson Site*; additional pages omitted due to excessive volume and lack of relevance to question).**

Industrial Welding: 126 Packard Rd, Niagara Falls, NY:
Owned by Olin from 1948 to 1964 (sold to Niagara County) and 1999 to present.
***(EXHIBIT F - Pages from October 1989, Remedial Investigation Report, Industrial Welding Site*; additional pages omitted due to excessive volume and lack of relevance to question).**

Niagara Falls Plant Site: Buffalo Ave., Niagara Falls, NY:
Owned by Olin from on or about 1897 to present. Operating chlor-alkali plant. See Response 4 (b) for additional plant operations.
(EXHIBIT G - Google map of Niagara Falls Plant property)

Indicate whether your company entered into any oral or written agreements or understandings concerning the Site or any parcels adjacent to the Site, including any arrangements with the current or prior property owners or operators to transfer materials to the Site or the adjacent parcels. If so, describe the nature of these agreements or understandings and provide any relevant documents.

Response: None to our knowledge based upon a review of our records.

4. Please provide the following information regarding your company's Buffalo Avenue facility located in Niagara Falls, New York:

   a. State the mailing address and identify a point of contact for the facility.

      Response:
      Olin Chlor Alkali Products
      P.O. Box 748
      Niagara Falls, NY 14302

      Marc Audet

   b. Describe the nature of the operations at the facility, including but not limited to the types of work performed there and the industrial, chemical, or institutional processes undertaken at the facility.

      Response:
      Olin has manufactured chemicals at this facility since 1897. Olin's principal business at the facility has always centered around the electrolytic production of chlorine and caustic soda from rock salt (sodium chloride) using various modifications of the chlor-alkali process. Calcium hypochlorite production was discontinued in September 1982.

      Despite the historical predominance of inorganic chemical production, several organic chemicals, including trichlorobenzene, trichlorophenol, and BHC (hexachlorocyclohexane), were manufactured at this facility between 1950 and 1956.
      ***(EXHIBIT H – Pages from Work Plan, Olin Buffalo Avenue Plant RFI, Niagara Falls, NY, Feb. 20, 1990*; additional pages omitted due to excessive volume and lack of relevance to question).**

   c. Indicate whether hexachlorocyclohexane ("HCH") was generated or used at the facility. If so, state the period when the chemical was generated or used and provide the quantity of the chemical generated or used at the facility.

      Response:
      Records indicate BHC production from June of 1950 until August of 1956. Quantities generated are presented on Exhibit I.
      ***EXHIBIT I - Letter to Interagency Task Force on Hazardous Wastes, March 23, 1979, Appendix F*; additional pages omitted due to excessive volume and lack of relevance to question).**

d. Describe the method of disposal of hazardous substances or industrial wastes generated at the facility, including how and where they were disposed of, and how and by whom they were transported. Specifically indicate the procedure for disposing any process waste containing lindane (gamma-HCH) or other HCH isomers, and identify the destination(s) of this waste.

Response:
Olin disposed of BHC and BHC related waste generated at the facility at the Pine & Tuscarora Avenue Site (aka Gibson Site) in 1957 and at the 102nd Street Site from 1948 to 1970.
(EXHIBIT J - Pages from July 1990, Remedial Investigation Final Report, Volume 1 – Table 1.2, 102nd Street Landfill Site; additional pages omitted due to excessive volume and lack of relevance to question).
***EXHIBIT K - Relevant Form B and Form C records from the Eckhardt Survey* (additional pages omitted due to excessive volume and lack of relevance to question).**

e. State whether the facility made available to any persons fill material that had been mixed with or contaminated by lindane or HCH isomer-containing material, such as filter cake. If so, indicate to whom such material was made available, when the material was made available, the nature of the material, and the specific use of this material by the recipient persons, if known.

Response:
Olin disposed of BHC and BHC related waste generated at the facility at the Pine & Tuscarora Avenue Site (aka Gibson Site). The Remedial Investigation Report indicates that in 1957, 403 drums of HCB and 101 truckloads of BHC cake were disposed at the Gibson Site.
***(EXHIBIT L – Pages from Remedial Investigation, Gibson Site, Niagara Falls, NY, July 31, 1986, Executive Summary*; additional pages omitted due to excessive volume and lack of relevance to question).**

At the 102nd Street Landfill Site, records indicate an 18,673 ton quantity of "black cake" was disposed that is documented to not contain lindane or HCH isomers. BHC was also disposed at this location. Records indicate there is no way to isolate the specific quantity of BHC disposed. BHC was reported amidst a combined quantity of several chemicals estimated at an aggregate total of 2,000 tons.
***(EXHIBIT M - Remedial Investigation Final Report, 102nd Street Landfill Site, Niagara Falls, NY, July, 1990, Table 1.2*; additional pages omitted due to excessive volume and lack of relevance to question).**

5. Provide all information of which you are aware regarding the disposal of lindane or HCH isomer-containing material at the Site, including but not limited when the disposal of such material took place, the source of the material, and the entity(ies) that disposed of the material.

Response: None to our knowledge based upon a review of our records.

6. Profiles showing HCH cake generated from soil borings at the Niagara Town Garage indicate potential similarities with profiles generated from the Gibson site, located on Tuscarora Road in Niagara Falls, New York. Please provide the following information regarding the Gibson site:

   a. Provide a point of contact that currently manages the operations, maintenance, and monitoring of the Gibson site and has knowledge of the location of the buried drums of benzene hexachloride placed at the Gibson site by Olin.

      Response:
      David Share
      Olin Corporation
      3855 North Ocoee Street, Suite 200
      Cleveland, TN 37312
      DMShare@olin.com

   b. Indicate whether your company has preserved soil samples or HCH-containing waste collected from the Gibson site and whether your company, or any other party, regularly or sporadically collect soil samples from the Gibson site for any purpose.

      Response: No soil samples are preserved and no soil samples are currently collected.

   c. State whether your company consents to allow EPA to collect a sample or samples of HCH-containing waste at the Gibson site.

      Response: All HCH-containing waste at the Gibson Site is buried underneath a cap consisting of a compacted clay layer (min 24"), two 40 mil HPDE flexible membrane layers, a 110 mil geotextile filter fabric, a 60 mil geotextile filter fabric,18" of structural fill and 6" of top soil. Olin does not want to penetrate the cap and believes the lack of documented connection with the Site makes the risks outweigh any benefits of violating the integrity of the cap. Penetrating the cap is ill-advised and may cause or exacerbate releases of hazardous substances to the environment.
      (EXHIBIT N: December 1990, As-Built Drawings, Pine and Tuscarora Remediation Project).

7. Profiles showing HCH cake generated from soil borings at the Niagara Town Garage indicate potential similarities with profiles generated from the 102nd Street site, located on Buffalo Avenue in Niagara Falls, New York. Please provide the following information regarding the 102nd Street site:

   a. Provide a point of contact that currently manages the operations, maintenance and monitoring of the 102nd Street site and has knowledge of the location of the buried HCH-contaminated material that Olin placed at the 102nd Street site.

      Response:
      David Share
      Olin Corporation
      3855 North Ocoee Street, Suite 200
      Cleveland, TN 37312
      DMShare@olin.com

b. Indicate whether your company has preserved soil samples or HCH-containing waste collected from the 102nd Street site and whether your company, or any other party, regularly or sporadically collect soil samples from the 102nd Street site for any purpose.

Response: No soil samples are preserved and no soil samples are currently collected.

c. State whether your company consents to allow EPA to collect a sample or samples of HCH-containing waste at the 102nd Street site.

Response: All HCH-containing waste at the 102 Street Site is buried underneath a cap consisting of topsoil, select cover fill, geotextile, geonet, geomembrane, geosynthetic clay layer, and fill/grade sub-base material. Olin does not want to penetrate the cap and believes the lack of documented connection with the Site makes the risks outweigh any benefits of violating the integrity of the cap. Penetrating the cap is ill-advised and may cause or exacerbate releases of hazardous substances to the environment.

***(EXHIBIT O: As-Built Drawing from February, 1986, Engineering Report, Final Volume 1, 102nd Street Landfill*; additional pages omitted due to excessive volume and lack of relevance to question).**

8. Identify all individuals with knowledge of facts relating to the responses provided to this Request for Information. Identify each individual who assisted, was consulted, or who answered on behalf of your company in the preparation of its response to this Request for Information, and specify the question(s) with which each respective person assisted in responding.

Response:
Olin objects to this question, and Instruction No. 4, to the extent they would require Olin to identify individuals who were consulted in preparation of this response but who did not provide any assistance or information beyond the information set forth in the Exhibits to this response. Such inquiry would be beyond the scope of EPA's information-gathering authority under CERCLA, and would invade the work product protection under federal common law and Rule 26(b)(3)(A) of the Federal Rules of Civil Procedure. Subject to this objection, Olin states:

Curt Richards
Olin Corporation
3855 North Ocoee Street, Suite 200
Cleveland, TN 37312

David Share
Olin Corporation
3855 North Ocoee Street, Suite 200
Cleveland, TN 37312

Marc Audet
Olin Corporation
2400 Buffalo Ave
Niagara Falls, NY 14303

Christine Markham
Olin Corporation
2400 Buffalo Ave
Niagara Falls, NY 14303

9. Do you have any additional information or documents that may help EPA identify other parties that may have been a source of, or otherwise been responsible for, the hazardous substances or industrial wastes that came to be located on the Niagara Town Garage Site? If so, please provide that information and those documents and identify the source(s) of your information.

   Response: None to our knowledge based upon a review of our records.

10. Identify all individuals (other than those identified in your response to Question 7) who may have information or documents relating to the generation, handling, storage, transportation, or disposal of the hazardous substances or industrial wastes that came to be located on the Site.

    Response: None to our knowledge based upon a review of our records.

EXHIBIT A

OLIN CORPORATION
OFFICERS

JOSEPH D. RUPP
Chairman and Chief Executive Officer

JOHN E. FISCHER
President and Chief Operating Officer

SCOTT R. ABEL
Vice President and President,
Chemical Distribution

FRANK W. CHIRUMBOLE
Vice President and President,
Chlor Alkali Products

STEPHEN C. CURLEY
Vice President & Treasurer

PAT D. DAWSON
Executive Vice President of Olin;
President, Epoxy and International

DOLORES J. ENNICO
Vice President, Human Resources

CLIVE A. GRANNUM
Vice President of Olin; President
Global Chlorinated Organics

G. BRUCE GREER, JR.
Vice President, Strategic Planning and Information Technology

JOHN L. MCINTOSH
Executive Vice President, President Chemicals & Ammunition

THOMAS J. O'KEEFE
Vice President and President, Winchester

GEORGE H. PAIN
Senior Vice President, General Counsel and Secretary

JOHN M. SAMPSON
Vice President of Olin; Vice President,
Manufacturing and Engineering, Chlor Alkali Vinyls, Epoxy and Global Chlorinated Organics

TODD A. SLATER
Vice President and Chief Financial Officer

RANDEE NICHOLE SUMNER
Vice President and Controller

JAMES A. VARILEK
Executive Vice President of Olin;
President, Chlor Alkali Vinyls and Services

EXHIBIT B

1569999021

ARTICLES OF AMENDMENT OF THE AMENDED AND RESTATED ARTICLES OF INCORPORATION OF OLIN CORPORATION

The undersigned, on behalf of the corporation set forth below, pursuant to Title 13.1, Chapter 9, Article 11 of the Code of Virginia, states as follows:

1. The name of the corporation is Olin Corporation (the "Corporation").

2. The amendment (the "Amendment") adopted is as follows:

The first sentence of Article FOURTH of the Corporation's Amended and Restated Articles of Incorporation is deleted in its entirety and replaced with the following:

> "The aggregate number of shares that the Corporation shall have authority to issue shall be 10,000,000 shares of Preferred Stock, par value $1 per share (hereinafter called Preferred Stock), and 240,000,000 shares of Common Stock, par value $1 per share (hereinafter called Common Stock)."

3. The Amendment was adopted by the Corporation's Board of Directors on March 26, 2015.

4. The Amendment was proposed by the Corporation's Board of Directors and submitted to and approved by the Corporation's shareholders on September 15, 2015, in accordance with the provisions of Title 13.1, Chapter 9 of the Code of Virginia. The designation, number of outstanding shares and number of votes entitled to be cast by each voting group entitled to vote separately on the Amendment was:

Designation	Number of Outstanding Shares	Number of Votes Entitled to be Cast
Common Stock, $1 par value per share	77,527,437	77,527,437

The total number of votes cast for and against the Amendment by each voting group entitled to vote separately on the Amendment was:

Voting Group	Votes "FOR"	Votes "AGAINST"
Common Stock, $1 par value per share	56,581,442	1,120,299

The total number of votes cast for the Amendment by each voting group was sufficient for approval of the Amendment by the voting group.

5. Pursuant to Section 13.1-606 of the Virginia Stock Corporation Act, this Amendment shall become effective at 6:00 a.m., Eastern Time, on October 1, 2015.

[Signature Page Follows]

1500000021

IN WITNESS WHEREOF, these Articles of Amendment are executed in the name of the Corporation as of this 28th day of September, 2015.

OLIN CORPORATION, a Virginia corporation

By: _____
Name: John E. Fischer
Title: President and Chief Operating Officer

SCC ID #: 0014903-9

[Signature Page to Articles of Amendment]

[[3557542]]

1509909021

COMMONWEALTH OF VIRGINIA
STATE CORPORATION COMMISSION

AT RICHMOND, SEPTEMBER 29, 2015

The State Corporation Commission has found the accompanying articles submitted on behalf of

Olin Corporation

to comply with the requirements of law, and confirms payment of all required fees. Therefore, it is ORDERED that this

CERTIFICATE OF AMENDMENT

be issued and admitted to record with the articles of amendment in the Office of the Clerk of the Commission, effective October 1, 2015, at 06:00 AM.

The corporation is granted the authority conferred on it by law in accordance with the articles, subject to the conditions and restrictions imposed by law.

STATE CORPORATION COMMISSION

By Mark C. Christie

Mark C. Christie
Commissioner

15-09-29-5562
AMENACPT
CIS0372

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ARTICLES OF RESTATEMENT

OF

OLIN CORPORATION

FIRST: The name of the Corporation immediately prior to this amendment and restatement is "Olin Corporation."

SECOND: The amendment adopted is to amend and restate the Articles of Incorporation of the Corporation in their entirety to read as set forth in Exhibit A attached hereto.

THIRD: The deletions from Article IV are provisions adopted by the Board of Directors without shareholder action creating three series of Preferred Stock of which no shares are outstanding.

FOURTH: This amendment and restatement was duly adopted by the Board of Directors of the Corporation on April 28, 2011. Pursuant to Sections 13.1-639.C and 13.1-711 of the Virginia Stock Corporation Act, shareholder approval was not required.

IN WITNESS WHEREOF, the Corporation has caused these Articles of Restatement to be signed by its authorized officer this 28th day of April, 2011.

OLIN CORPORATION

By: _____

George H. Pain
Senior Vice President, General Counsel
and Secretary

Exhibit A

AMENDED AND RESTATED

ARTICLES OF INCORPORATION

OF

OLIN CORPORATION

FIRST: The name of the Corporation shall be Olin Corporation.

SECOND: The principal office of the Corporation in the Commonwealth of Virginia shall be at Abingdon, Virginia 24210.

THIRD: The purposes for which the Corporation is formed are as follows: If, when and to the extent lawful for a corporation organized under the laws of the Commonwealth of Virginia (provided that none of the following powers and purposes shall be construed so as to constitute the Corporation a railroad company, a telegraph company, a telephone company, a canal company, a turnpike company, or other company designated by law as a public service corporation or which shall need to possess the right of eminent domain for the purpose of taking and condemning lands within the Commonwealth of Virginia within the meaning of the statutes thereof):

(1) to produce, manufacture, process, refine, treat, extract, store, purchase or otherwise acquire, sell, deal in, transport, distribute, market, handle and otherwise turn to account or dispose of, either in their natural form or any altered, converted or manufactured form, chemicals and chemical compositions of any state, form, nature, mixture or description, including, without limiting the generality of the foregoing, salt, soda ash, caustic soda, chlorine, ammonia, bicarbonate of soda, sulphuric acid, superphosphate, mixed fertilizer, ammonium phosphate, ammonium sulphate, phosphoric acid, sulphur, ethylene glycol, ethylene oxide, polyethylene and other organic chemicals, and all mixtures, derivatives, products or by-products of such chemicals;

(2) to produce, manufacture, process, refine, treat, store, purchase or otherwise acquire, sell, deal in, transport, distribute, market, handle and otherwise turn to account or dispose of ammunition, firearms, explosives, munitions and stores of war, and components thereof;

(3) to produce, manufacture, process, refine, treat, extract, store, purchase or otherwise acquire, sell, deal in, transport, distribute, market, handle and otherwise turn to account or dispose of, either in their natural form or in any altered, converted or manufactured form, drugs of every kind and description and the constituent parts and elements thereof

including, without limiting the generality of the foregoing, all kinds of antibiotic, pharmaceutical, medicinal-chemical, biological, veterinary, dental, hygienic, medicinal-dietetic, household medicinal and toilet substances, products, processes, compounds and compositions, and apparatus and medicinal, hospital and druggists; supplies of every kind and description;

(4) to produce, manufacture, process, refine, treat, extract, store, purchase or otherwise acquire, sell, deal in, transport, distribute, market, handle and otherwise turn to account or dispose of, either in their natural form or in any altered, converted or manufactured form, oil, gas and other hydrocarbons, and compositions thereof, of any state, form, nature, mixture or description, including, without limiting the generality of the foregoing, methane, ethane, propane, butane, gasoline and kerosene, and all mixtures, derivatives, products or by-products or such hydrocarbons;

(5) to produce, manufacture, process, refine, treat, extract, store, purchase or otherwise acquire, sell, deal in, transport, distribute, market, handle and otherwise turn to account or dispose of iron, steel, copper, brass, nickel, silver, aluminum and other metals and metal products, plastics and plastic products, wood and wooden products, and paper and paper products;

(6) to acquire by lease, purchase, contract, concession or otherwise, and to own, explore, exploit, develop, improve, operate, lease, enjoy, control, manage or otherwise turn to account, and to mortgage, grant, sell, exchange, convey or otherwise dispose of, any and all kinds of real estate, lands, options, concessions, grants, land patents, timber lands, oil rights, gas rights, and any other mineral rights, oil royalties, gas royalties, and any other mineral royalties, and any other franchises, claims, rights, privileges, easements, tenements, estates, hereditaments and interests in properties, real or personal, tangible or intangible, of every description and nature whatsoever, useful in the conduct of the business of the Corporation;

(7) to construct, build, purchase, lease or otherwise acquire, equip, hold, own, improve, develop, manage, maintain, control, operate, lease, mortgage, create liens upon, sell, convey or otherwise dispose of, or turn to account, any and all factories, plants, refineries, laboratories, oil wells, gas wells, mines, lumberyards, sawmills, installations, equipment, machinery, storage tanks, tank cards, tank wagons, locomotives, railroad cars, tractors, trucks, cars, airplanes, boats, barges, and other vehicles and vessels, pipe lines, pumps, pumping stations, filling stations, railways, roadways, canals, water courses, wharves, piers, docks, basins, and other structures, machines and apparatus of every kind and description, and any and all rights and privileges therein, useful in the conduct of the business of the Corporation;

(8) to apply for, register, obtain, purchase, lease, take licenses in respect of or otherwise acquire, and to hold, own, use, operate, develop, enjoy, turn to account, grant licenses and immunities in respect of, manufacture under and to introduce, sell, assign, mortgage, pledge or otherwise dispose of, and, in any manner deal with and contract with reference to:

(a) inventions, devices, formulae, processes and any improvements and modifications thereof, and

(b) letters patent, patent rights, patented processes, copyrights, designs and similar rights, trade-marks, trade symbols and other indications of origin and ownership granted by or recognized under the laws of the United States of America or of any state or subdivision thereof, or of any foreign country or subdivision thereof, and all rights connected therewith or appertaining thereunto;

(9) to conduct and carry on any experimental and research work;

(10) to manufacture, process, purchase, sell and generally to trade and deal in and with goods, wares and merchandise of every kind, nature and description, and to engage and participate in any mercantile, industrial or trading business of any kind or character whatsoever;

(11) to acquire by purchase, exchange, lease or otherwise and to own, hold, use, develop, operate, sell, assign, lease, transfer, convey, exchange, mortgage, pledge or otherwise dispose of or deal in and with, real and personal property of every class or description and rights and privileges therein wheresoever situate;

(12) to subscribe to, purchase or otherwise acquire, and to hold, mortgage, pledge, sell, exchange or otherwise dispose of, securities (which term, for the purpose of this Article THIRD, includes, without limitation of the generality thereof, any shares of stock, bonds, debentures, notes, mortgages or other obligations, and any certificates, receipts or other instruments representing rights to receive, purchase or subscribe for the same, or representing any other rights or interests therein or in any property or assets) created or issued by any persons, firms, associations, corporations, or governments or subdivisions thereof; to make payment therefor in any lawful manner, and to exercise as owner or holder of any securities, any and all rights, powers and privileges in respect thereof;

(13) to make, enter into, perform and carry out contracts of every kind and description with any person, firm, association, corporation or government or subdivision thereof;

(14) to acquire by purchase, exchange or otherwise, all, or any part of, or any interest in, the properties, assets, business and good will of any one or more persons, firms, associations or corporations heretofore or hereafter engaged in any business for which a corporation may now or hereafter be organized under the laws of the Commonwealth of Virginia; to pay for the same in cash, property or its own or other securities; to hold, operate, reorganize, liquidate, sell or in any manner dispose of the whole or any part thereof; and in connection therewith, to assume or guarantee performance of any liabilities, obligations or contracts of such persons, firms, associations or corporations, and to conduct the whole or any part of any business thus acquired;

(15) to lend its uninvested funds from time to time to such extent, to such persons, firms, associations, corporations, governments or subdivisions thereof, and on such terms and on such security, if any, as the Board of Directors of the Corporation may determine;

(16) to guarantee or become surety in respect to the payment of principal, interest or dividends upon, and the performance of sinking fund or other obligations of, any securities, and to guarantee in any way permitted by law the performance of any of the contracts or other

undertakings in which the Corporation may otherwise be or become interested, of any person, firm, association, corporation, government or subdivision thereof, or of any other combination, organization or entity whatsoever;

(17) to borrow money for any of the purposes of the Corporation, from time to time, and without limit as to amount; from time to time to issue and sell its own securities in such amounts, on such terms and conditions, for such purposes and for such prices, now or hereafter permitted by the laws of the Commonwealth of Virginia and by these Articles of Incorporation, as the Board of Directors of the Corporation may determine; and to secure such securities by mortgage upon, or the pledge of, or the conveyance or assignment in trust of, the whole or any part of the properties, assets, business and good will of the Corporation, then owned or thereafter acquired;

(18) to purchase, hold, cancel, reissue, sell, exchange, transfer or otherwise deal in its own securities from time to time to such extent and in such manner and upon such terms as the Board of Directors of the Corporation shall determine; provided that the Corporation shall not use its funds or property for the purchase of its own shares of capital stock when such use would cause any impairment of its capital, except to the extent permitted by law; and provided further that shares of its own capital stock belonging to the Corporation shall not be voted upon directly or indirectly;

(19) to organize or cause to be organized under the laws of the Commonwealth of Virginia, or of any other State of the United States of America, or of the District of Columbia, or of any territory, dependency, colony or possession of the United States of America, or of any foreign country, a corporation or corporations for the purpose of transacting, promoting or carrying on any or all of the objects or purposes for which the Corporation is organized, and to dissolve, wind up, liquidate, merge or consolidate any such corporation or corporations or to cause the same to be dissolved, wound up, liquidated, merged or consolidated;

(20) to conduct its business in any and all of its branches and maintain offices both within and without the Commonwealth of Virginia, in any and all States of the United States of America, in the District of Columbia, in any or all territories, dependencies, colonies or possessions of the United States of America, and in foreign countries;

(21) to such extent as a corporation organized under the laws of the Commonwealth of Virginia may now or hereafter lawfully do, to do, either as principal or agent and either alone or in connection with, or in partnership with, other persons, firms, associations, corporations and other legal entities, whether organized under the laws of the Commonwealth of Virginia or otherwise, governments or subdivisions thereof, or individuals, all and everything necessary, suitable, convenient or proper for, or in connection with, or incident to, the accomplishment of any of the purposes or the attainment of any one or more of the objects herein enumerated, or designed directly or indirectly to promote the interests of the Corporation or to enhance the value of its properties; and in general to do any and all things and exercise any and all powers, rights and privileges which a corporation may now or hereafter be organized to do or to exercise under the laws of the Commonwealth of Virginia or under any act amendatory thereof, supplemental thereto or substituted therefor.

The foregoing clauses shall be construed both as objects and powers, and each as an independent right and power, and it is hereby expressly provided that the enumeration herein of specific objects and powers shall not be held to limit or restrict in any manner the general powers of this Corporation, and all the powers and purposes hereinbefore enumerated shall be exercised, carried out and enjoyed by this Corporation within the Commonwealth of Virginia and outside of the Commonwealth of Virginia to such extent and in such manner as a corporation of this character organized under the laws of the Commonwealth of Virginia may properly and legally exercise, carry out and enjoy, but nothing herein contained shall be deemed to authorize or permit this Corporation to carry on any business or exercise any power or do any act which a corporation of this character, formed under the laws of the Commonwealth of Virginia, may not at the time lawfully carry on or do.

FOURTH: The aggregate number of shares that the Corporation shall have authority to issue shall be 10,000,000 shares of Preferred Stock, par value $1 per share (hereinafter called Preferred Stock), and 120,000,000 shares of Common Stock, par value $1 per share (hereinafter called Common Stock).

The following is a description of each of said different classes of stock, and a statement of the preferences, limitations, voting rights and relative rights in respect of the shares of each such class:

1. The Board of Directors shall have authority, by resolution or resolutions, at any time and from time to time to divide and establish any or all of the unissued shares of Preferred Stock not then allocated to any series of Preferred Stock into one or more series, and, without limiting the generality of the foregoing, to fix and determine the designation of each such series, the number of shares which shall constitute such series and the following relative rights and preferences of the shares of each series so established:

(a) The annual dividend rate payable on shares of such series, the time of payment thereof, whether such dividends shall be cumulative or non- cumulative, and the date or dates from which any cumulative dividends shall commence to accrue;

(b) the price or prices at which and the terms and conditions, if any, on which shares of such series may be redeemed;

(c) the amounts payable upon shares of such series in the event of the voluntary or involuntary dissolution, liquidation or winding-up of the affairs of the Corporation;

(d) the sinking fund provisions, if any, for the redemption or purchase of shares of such series;

(e) the extent of the voting powers, if any, of the shares of such series;

(f) the terms and conditions, if any, on which shares of such series may be converted into shares of stock of the Corporation of any other class or classes or into shares of any other series of the same or any other class or classes;

(g) whether, and if so the extent to which, shares of such series may participate with the Common Stock in any dividends in excess of the preferential dividend fixed for shares of such series or in any distribution of the assets of the Corporation, upon a liquidation, dissolution or winding-up thereof, in excess of the preferential amount fixed for shares of such series; and

(h) any other preferences and relative, optional or other special rights, and qualifications, limitations or restrictions of such preferences or rights, of shares of such series not fixed and determined by law or in this Article FOURTH.

2. Each series of Preferred Stock shall be so designated as to distinguish the shares thereof from the shares of all other series. Different series of Preferred Stock shall not be considered to constitute different classes of shares for the purpose of voting by classes except as otherwise fixed by the Board of Directors with respect to any series at the time of the creation thereof.

3. So long as any shares of Preferred Stock are outstanding, the Corporation shall not declare and pay or set apart for payment any dividends (other than dividends payable in Common Stock or other stock of the Corporation ranking junior to the Preferred Stock as to dividends) or make any other distribution on such junior stock, if at the time of making such declaration, payment or distribution the Corporation shall be in default with respect to any dividend payable on, or any obligation to retire, shares of Preferred Stock.

4. Shares of any series of Preferred Stock which have been redeemed or otherwise reacquired by the Corporation (whether through the operation of a sinking fund, upon conversion or otherwise) shall, upon cancellation in accordance with law, have the status of authorized and unissued shares of Preferred Stock and may be redesignated and reissued as a part of such series or of any other series of Preferred Stock. Shares of Common Stock which have been reacquired by the Corporation shall, upon cancellation in accordance with law, have the status of authorized and unissued shares of Common Stock and may be reissued.

5. Subject to the provisions of any applicable law or of the By-laws of the Corporation as from time to time amended with respect to the closing of the transfer books or the fixing of a record date for the determination of stockholders entitled to vote, and except as otherwise provided by law or in resolutions of the Board of Directors establishing any series of Preferred Stock pursuant to the provisions of paragraph 1 of this Article FOURTH, the holders of outstanding shares of Common Stock of the Corporation shall exclusively possess voting power for the election of directors and for all other purposes, each holder of record of shares of Common Stock of the Corporation being entitled to one vote for each share of such stock standing in his name on the books of the Corporation.

6. No holder of shares of stock of any class of the Corporation shall, as such holder, have any right to subscribe for or purchase (a) any shares of stock of any class of the Corporation, or any warrants, options or other instruments that shall confer upon the holder thereof the right to subscribe for or purchase or receive from the Corporation any shares of stock of any class, whether or not such shares shall be unissued shares, now or hereafter authorized, or shares acquired by the Corporation after the issue thereof, and whether or not such shares of stock, warrants, options or other instruments are issued for cash or services or property or by way of dividend or otherwise, or (b) any other security of the Corporation which shall be convertible into, or exchangeable for, any shares of stock of the Corporation of any class or classes, or to which shall be attached or appurtenant any warrant, option or other instrument that shall confer upon the holder of such security the right to subscribe for or purchase or receive from the Corporation any shares of its stock of any class or classes, whether or not such shares shall be unissued shares, now or hereafter authorized, or shares acquired by the Corporation after the issue thereof, and whether or not such securities are issued for cash or services or property or by way of dividend or otherwise, other than such right, if any, as the Board of Directors, in its sole discretion, may from time to time determine. If the Board of Directors shall offer to the holders of shares of stock of any class of the Corporation, or any of them, any such shares of stock, options, warrants, instruments or other securities of the Corporation, such offer shall not, in any way, constitute a waiver or release of the right of the Board of Directors subsequently to dispose of other securities of the Corporation without offering the same to said holders.

7. Anything herein to the contrary notwithstanding, dividends upon shares of any class of stock of the Corporation shall be payable only out of assets legally available for the payment of such dividends, and the rights of the holders of shares of stock of the Corporation in respect of dividends shall at all times be subject to the power of the Board of Directors to determine what dividends, if any, shall be declared and paid to the stockholders.

8. Subject to the provisions hereof and except as otherwise provided by law, shares of stock of any class of the Corporation may be issued for such consideration and for such corporate purposes as the Board of Directors may from time to time determine.

FIFTH: The period of the duration of the Corporation is unlimited and perpetual.

SIXTH:

1. The number of directors shall be as specified in the By-laws of the Corporation but such number may be increased or decreased from time to time in such manner as may be prescribed in the By-laws. In no event shall such number exceed 18. In the absence of a By-law specifying the number of directors, the number shall be 15. Commencing with the 1985 annual meeting of stockholders, the Board of Directors shall be divided into three classes, Class I, Class II, and Class III, as nearly equal in number as possible. At the 1985 annual meeting of stockholders, directors of the first class (Class I) shall be elected to hold office for a term expiring at the 1986 annual meeting of stockholders; directors of the second class (Class II) shall be elected to hold office for a term expiring at the 1987 annual meeting of stockholders; and directors of the third class (Class III) shall be elected to hold office for a term expiring at the 1988 annual meeting of stockholders. At each annual meeting of stockholders after 1985, the

successors to the class of directors whose term shall then expire shall be identified as being of the same class as the directors they succeed and elected to hold office for a term expiring at the third succeeding annual meeting of stockholders. When the number of directors is changed, any newly-created directorships or any decrease in directorships shall be so apportioned among the classes by the Board of Directors as to make all classes as nearly equal in number as possible.

2. Subject to the rights of the holders of any Preferred Stock then outstanding, directors may be removed only with cause.

3. Subject to the rights of the holders of any Preferred Stock then outstanding, newly-created directorships resulting from any increase in the number of directors and any vacancies in the Board of Directors resulting from death, resignation, disqualification, removal or other cause shall be filled solely by the Board of Directors or at an annual meeting of stockholders by the stockholders entitled to vote on the election of directors. Unless otherwise provided by law, directors so chosen by the stockholders shall hold office for a term expiring at the annual meeting of stockholders at which the term of the class to which they have been elected expires. If the directors remaining in office constitute fewer than a quorum of the Board, they may fill the vacancy by the affirmative vote of a majority of the directors remaining in office.

SEVENTH: The amount of real estate to which the holdings of the Corporation at any one time are to be limited is five million (5,000,000) acres.

EIGHTH: The following provisions are inserted for the regulation of the business and for the conduct of the affairs of the Corporation, and it is expressly provided that the same are to be in furtherance and not in limitation or exclusion of the powers conferred by statute or otherwise:

1. Except where other notice is specifically required by statute, written notice of any meeting of stockholders given as provided by the By-laws of the Corporation shall be sufficient without publication or other form of notice.

2. A meeting of the stockholders, other than the annual meeting of stockholders, may be held at any time but only upon the call of the Board of Directors, the Chairman of the Board, the President or the holders of a majority of the shares of issued and outstanding stock of the Corporation entitled to vote at the meeting.

3. In furtherance and not in limitation of the powers conferred by the laws of the Commonwealth of Virginia, the Board of Directors is expressly authorized and empowered:

(a) To make, alter, amend and repeal the By-laws, subject to the power of the stockholders to alter or repeal the By-laws made by the Board of Directors.

(b) Subject to the applicable provisions of the By-laws then in effect, to determine, from time to time, whether and to what extent and at what times and places and under what conditions and regulations the accounts and books of the Corporation, or any of them, shall be open to the inspection of the stockholders, and no stockholder shall have any right to inspect

any account or book or document of the Corporation, except as conferred by the laws of the Commonwealth of Virginia, unless and until authorized so to do by resolution of the Board of Directors or of the stockholders of the Corporation.

(c) By resolution passed by a majority of the whole Board of Directors, (i) to designate two or more of their number, to constitute an executive committee, which, to the extent provided in such resolution, shall have and may exercise the power of the Board of Directors in the management of the business and affairs of the Corporation, and may have power to authorize the seal of the Corporation to be affixed to all papers which require it; and (ii) to appoint such other committees, agents and representatives as may be necessary and convenient for the conduct or the management of the business of the Corporation.

(d) To determine whether any, and, if any, what part, of the net earnings of the Corporation or of its net assets in excess of its capital shall be declared in dividends and paid to the stockholders, and to direct and determine the use and disposition of any such net earnings or such net assets in excess of capital for any lawful purpose of the Corporation, and, without limiting the generality of the foregoing, from time to time as the Board of Directors may deem necessary or desirable, to set aside reserves for any purpose, to fix from time to time the amount of earnings to be reserved for working capital and to set aside such reserves or make such other provisions for additions, improvements and betterments to plant and equipment, for expansion of the business of the Corporation (including the acquisition of real and personal property for that purpose), for plans for maintaining employment at the plants of the Corporation, and for other plans for the benefit of employees generally.

(e) To establish pension, bonus, profit-sharing or other types of incentive or compensation plans for the officers and employees (including officers and employees who are also directors) of the Corporation and its subsidiaries and to fix the amount of earnings to be distributed or shared and to determine the persons to participate in any such plans and the amounts of their respective participations.

(f) To issue and sell or grant options for the purchase of shares of Common Stock to officers and employees (including officers and employees who are also directors) of the Corporation and its subsidiaries for such consideration and on such terms and conditions as the Board of Directors may from time to time determine.

In addition to the powers and authorities hereinbefore or by statute expressly conferred upon it, the Board of Directors may exercise all such powers and do all such acts and things as may be exercised or done by the Corporation, subject, nevertheless, to the provisions of the laws of the Commonwealth of Virginia, of these Articles of Incorporation and of the By- laws of the Corporation.

4. No contract or other transaction between the Corporation and any other corporation and no other act of the Corporation shall, in the absence of fraud, in any way be affected or invalidated by the fact that any of the directors of the Corporation are pecuniarily or otherwise interested in, or are directors or officers of, such other corporation. Any director of the Corporation individually or any firm or association of which any director may be a member, may

be a party to, or may be pecuniarily or otherwise interested in, any contract or transaction of the Corporation, provided that the fact that he individually or such firm or association is so interested shall be disclosed or shall have been known to the Board of Directors or a majority of such members thereof as shall be present at any meeting of the Board of Directors at which action upon any such contract or transaction shall be taken. Any director of the Corporation who is also a director or officer of such other corporation or who is so interested may be counted in determining the existence of a quorum at any meeting of the Board of Directors which shall authorize any such contract or transaction, and may vote thereat to authorize any such contract or transaction, with like force and effect as if he were not such director or officer of such other corporation or not so interested. Any director of the Corporation may vote upon any contract or other transaction between the Corporation and any subsidiary or affiliated corporation without regard to the fact that he is also a director of such subsidiary or affiliated corporation.

Any contract, transaction or act of the Corporation or of the directors, which shall be ratified by a majority of a quorum of the stockholders of the Corporation at any annual meeting, or at any special meeting called for such purpose, shall, insofar as permitted by law or by these Articles of Incorporation, be as valid and as binding as though ratified by every stockholder of the Corporation; provided, however, that any failure of the stockholders to approve or ratify any such contract, transaction or act, when and if submitted, shall not be deemed in any way to invalidate the same or deprive the Corporation, its directors, officers or employees, of its or their right to proceed with such contract, transaction or act.

Subject to any limitation in the By-laws, the members of the Board of Directors shall be entitled to reasonable fees, salaries or other compensation for their services and to reimbursement for their expenses as such members. Nothing contained herein shall preclude any director from serving the Corporation, or any subsidiary or affiliated corporation, in any other capacity and receiving proper compensation therefor.

NINTH: Except as expressly otherwise required in these Articles of Incorporation, an amendment or restatement of these Articles requiring shareholder approval shall be approved by a majority of the votes entitled to be cast by each voting group that is entitled to vote on the matter, unless in submitting an amendment or restatement to the shareholders the Board of Directors shall require a greater vote.

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COMMONWEALTH OF VIRGINIA
STATE CORPORATION COMMISSION

AT RICHMOND, MAY 2, 2011

The State Corporation Commission has found the accompanying articles submitted on behalf of

Olin Corporation

to comply with the requirements of law, and confirms payment of all required fees. Therefore, it is ORDERED that this

CERTIFICATE OF RESTATEMENT

be issued and admitted to record with the articles of restatement in the Office of the Clerk of the Commission, effective May 2, 2011.

The corporation is granted the authority conferred on it by law in accordance with the articles, subject to the conditions and restrictions imposed by law.

STATE CORPORATION COMMISSION

By

James C. Dimitri
Commissioner

11-04-29-1243
AMENACPT
CIS0322

Commonwealth of Virginia

State Corporation Commission

I Certify the Following from the Records of the Commission:

The foregoing is a true copy of all documents constituting the charter of Olin Corporation on file in the Clerk's Office of the Commission.

Nothing more is hereby certified.

Signed and Sealed at Richmond on this Date:
October 19, 2015

Joel H. Peck

Joel H. Peck, Clerk of the Commission

CIS0502

EXHIBIT C

SUBSIDIARIES OF OLIN CORPORATION

(As of October 25, 2015)

Company	Shareholders/ Members	% Ownership	Jurisdiction
Blue Cube Holding LLC	Blue Cube Spinco Inc.	100	DE
Blue Cube Intermediate Holding 1 LLC	Blue Cube Holdings C.V.	100	DE
Blue Cube Intermediate Holding 2 LLC	Blue Cube Holdings C.V.	100	DE
Blue Cube International Holdings LLC	Blue Cube Spinco Inc.	100	DE
Blue Cube IP LLC	Blue Cube Holding LLC	100	DE
Blue Cube Operations LLC	Blue Cube Holding LLC	100	DE
Blue Cube Spinco Inc.	Olin	100	DE
Henderson Groundwater LLC	Pioneer Americas LLC has a 1/3 ownership in this limited liability company that will be treated as a partnership for income tax purposes	33	NV
HPCM LLC	K. A. Steel Chemicals Inc.	100	DE
Imperial West Chemical Co.	Pioneer Companies, LLC	100	NV
K. A. Steel Chemicals Inc.	Olin	100	DE
K. A. Steel International	K. A. Steel Chemicals Inc.	100	DE
KAS Muscatine LLC	K. A. Steel Chemicals Inc.	100	IA
KNA California, Inc.	Imperial West Chemical Co.	100	DE
KWT, Inc.	Pioneer Water Technologies, Inc.	100	DE
Olin Benefits Management, Inc.	Olin	100	CA
Olin Business Holdings	Olin Corporation; Olin Engineered Systems, Inc.; Pioneer Americas LLC	62.05 36.15 1.80	DE
Olin Chlor Alkali Logistics Inc.	Olin Sunbelt, Inc.; Olin Sunbelt II, Inc.	50 50	DE
Olin Chlorine 7, LLC (formerly Dow-Mitsui Chlor-Alkali LLC)	Blue Cube Holding LLC	100	DE
Olin Engineered Systems, Inc.	Olin	100	DE
Olin Funding Company LLC	Olin	100	DE
Olin North American Holdings, Inc.	Olin	100	DE
Olin Sunbelt, Inc.	Olin	100	DE
Olin Sunbelt II, Inc.	Olin	100	DE
Pioneer Americas LLC	Olin Canada ULC	100	DE
Pioneer Companies, LLC	Olin North American Holdings, Inc.	100	DE
Pioneer (East), Inc.	Pioneer Companies, LLC	100	DE
Pioneer Licensing, Inc.	Pioneer Companies, LLC	100	DE
Pioneer Transportation LLC	Olin Business Holdings	100	DE
Pioneer Water Technologies, Inc.	Pioneer Companies, LLC	100	DE
Sunbelt Chlor Alkali Partnership	Olin Sunbelt, Inc.; Olin Sunbelt II, Inc.	50 50	DE
TriOlin, LLC	Olin	100	DE
U.S. Munitions, LLC	Joint venture company with Winchester Defense, LLC; BAE Systems Ordnance Systems, Inc.	49 51	DE
Winchester Ammunition, Inc.	Olin	100	DE
Winchester Defense, LLC	Olin	100	DE
INTERNATIONAL			
3229897 Nova Scotia Co.	Blue Cube Holding LLC	100	Nova Scotia, Canada
BC Chemicals Singapore Pte. Ltd.	Blue Cube Chemicals Singapore Pte. Ltd.	100	Singapore
BC Química Brasil Comércio de Produtos	Blue Cube Brasil Comércio de Produtos	100	Brazil

Químicos Ltda. (See footnote for Subordinates)	Químicos Ltda.		
BC Switzerland GmbH	Nedastra Holding B.V.	100	Switzerland
Blue Cube Argentina Srl	Blue Cube Holding LLC	100	Argentina
Blue Cube Australia Pty Ltd	Blue Cube Chemicals Singapore Pte. Ltd.	100	Australia
Blue Cube Belgium BVBA	Nedastra Holding B.V.	100	Belgium
Blue Cube Brasil Comércio de Produtos Químicos Ltda. *(See footnote for Subordinates)*	Nedastra Holding B.V.	100	Brazil
Blue Cube Chemicals FZE	Nedastra Holding B.V.	100	UAE
Blue Cube Chemicals Hong Kong Limited	Blue Cube Chemicals Singapore Pte. Ltd.	100	Hong Kong
Blue Cube Chemicals India Private Limited	Blue Cube Chemicals Singapore Pte. Ltd.	100	India
Blue Cube Chemicals Italy S.r.l.	Nedastra Holding B.V.	100	Italy
Blue Cube Chemical Korea Ltd.	Blue Cube Chemicals (Zhangjiagang) Co., Ltd.	100	Korea
Blue Cube Chemicals Singapore Pte. Ltd.	Nedastra Holding B.V.	100	Singapore
Blue Cube Chemicals Singapore Pte. Ltd. Taiwan Branch	Blue Cube Chemicals Singapore Pte. Ltd.	100	
Blue Cube Chemicals South Africa Pty Ltd	Nedastra Holding B.V.	100	South Africa
Blue Cube Chemicals (UK) Limited	Nedastra Holding B.V.	100	United Kingdom
Blue Cube Chemicals (Zhangjiagang) Co., Ltd.	Blue Cube Chemicals Singapore Pte. Ltd.	100	China
Blue Cube Chemicals (Zhangjiagang) Co., Ltd. Shanghai Branch	Blue Cube Chemicals (Zhangjiagang) Co., Ltd.	100	
Blue Cube Chile Commercial Limitada	Blue Cube Holding LLC	100	Chile
Blue Cube Columbia Ltda	Blue Cube Holding LLC; 1% minority interest owned by Blue Cube Operations LLC	99 01	Columbia
Blue Cube Denmark ApS	Nedastra Holding B.V.	100	Denmark
Blue Cube France SAS	Nedastra Holding B.V.	100	France
Blue Cube Germany Assets GmbH & Co. KG	Blue Cube Germany Productions Management GmbH; Blue Cube Germany Assets Management GmbH		Germany
Blue Cube Germany Assets Management GmbH	Nedastra Holding B.V.	100	Germany
Blue Cube Germany Productions GmbH & Co. KG	Blue Cube Germany Productions Management GmbH; Blue Cube Germany Assets Management GmbH		Germany
Blue Cube Germany Productions Management GmbH	Nedastra Holding B.V.	100	Germany
Blue Cube Holdings C.V.	Blue Cube International Holdings LLC; Blue Cube Holding LLC		Netherlands
Blue Cube Japan LLC	Blue Cube Chemicals Singapore Pte. Ltd.	100	Japan
Blue Cube Mexico, S. de R.L. de C.V.	Blue Cube Holding LLC; 2% minority interest owned by Blue Cube Operations LLC	98 2	Mexico
Blue Cube Netherlands B.V.	Nedastra Holding B.V.	100	Netherlands
Blue Cube Poland Sp.z.o.o.	Nedastra Holding B.V.	100	Poland
Blue Cube Rasha OOO	Nedastra Holding B.V.	100	Russia
Blue Cube Servicios Administrativos S. de R. L. de C.V.	Blue Cube Holding LLC; 10% minority interest owned by Blue Cube Operations LLC	90 10	Mexico
Blue Cube Spain S.L.U.	Nedastra Holding B.V.	100	Spain
Blue Cube (Thailand) Company Limited	Blue Cube Holding LLC;	99.998	Thailand

	0.001% minority interest owned by Blue Cube Operations LLC; 0.001% minority interest owned by Blue Cube IP LLC	0.001 0.001	
Blue Cube (Thailand) Company Limited Hong Kong Branch	Blue Cube (Thailand) Company Limited	100	
Blue Cube Turkey Kimyasal Ürünler Limited Şirketi	Nedastra Holding B.V.	100	Turkey
CANSO Chemicals Limited	Olin Canada ULC; Northern Pulp is the other 50% owner (Pioneer related)	50 50	Nova Scotia, Canada
Nedastra Holding B.V.	Nedastra International C.V.	100	Netherlands
Nedastra International C.V.	Blue Cube Intermediate Holding 1 LLC; Blue Cube Intermediate Holding 2 LLC		Netherlands
Nutmeg Insurance Limited	Olin	100	Bermuda
Olin Canada ULC	Olin North American Holdings, Inc.	100	Nova Scotia, Canada
Winchester Australia Limited	Olin	100	Australia

Subordinates of Blue Cube Brasil Comércio de Produtos Químicos Ltda.:

- Branch of Blue Cube Brasil Comércio de Produtos Químicos Ltda.
- São Paulo Branch of Blue Cube Brasil Comércio de Produtos Químicos Ltda.
- Bahia Branch of Blue Cube Brasil Comércio de Produtos Químicos Ltda. (Caustic Soda)
- Paraná Branch of Blue Cube Brasil Comércio de Produtos Químicos Ltda. (Caustic Soda)

Subordinate of BC Quimica Brasil Comércio de Produtos Químicos Ltda.:

- Branch of BC Química Brasil Comércio de Produtos Químicos Ltda.

The following subsidiaries are dormant and were 100% directly or indirectly owned by Olin:

Bridgeport Brass Corporation
Dairy Holdings, Inc.
Hunt Trading Co.
International Foils, Inc.
Lectranator Corporation
LTC Reserve Corp.
Mathieson Pan-American Chemical Corporation
Monarch Brass & Copper Corp.
Monarch Brass & Copper of New England Corp.
New Haven Copper Company
Old Atlanta, Inc.
Old Jacksonville, Inc.
Old Johnson City, Inc.
Olin American, Inc.
Olin American Properties, Inc.
Olin Chlor Alkali Products Sales Corporation
Olin Far East, Limited
Olin Financial Services Inc.
Olin Specialty Metals Corp.
Ravenna Arsenal, Inc.
SEFCO Holdings, Inc.
The Winchester Repeating Arms Company
TriStar Sports, Inc.
Waterbury Rolling Mills, Inc.
Winchester Homes, Inc.

International:

Olin Chlor Alkali Products Canadian Sales Corporation
Olin Hunt Specialty Products S.r.l.
Reductone Brasil Ltda.
Tristar Sports GmbH
TriMark Sportartikel GmbH

EXHIBIT D

1.0 INTRODUCTION

The 102nd Street Landfill Site (Site), presently owned by Occidental Chemical Corporation (OCC) and Olin Corporation (Olin), is located at the eastern edge of the City of Niagara Falls adjacent to the Niagara River. The Site was operated as a disposal site for industrial wastes by both companies and their predecessors.

OCC, formerly Hooker Chemical and Plastics Company, operated its 15.6-acre portion of the Site as a landfill from approximately 1943 to 1970. Olin operated its 6.5-acre portion of the Site from 1948 to 1970. In December 1970, the Buffalo District Corps of Engineers (COE) notified OCC and Olin that construction, filling and dumping at the Site must cease until a dike or bulkhead was installed along the River shore, under a permit from the COE. The bulkhead was completed in 1972/1973, and no subsequent landfilling occurred.

A comprehensive Remedial Investigation (RI) program for the Site was developed by the United States Environmental Protection Agency (EPA), New York State (State) and OCC/Olin. The Work Plan for the RI was approved by the United States District Court for the Western District of New York in 1984. Between July 1984 and October 1985, protocols for the RI were developed. OCC and Olin commenced field work at the Site in October 1985 and completed this activity in April 1988. The information collected during the RI is presented in summary form in this report, the Draft Final RI Report.

1.1 OBJECTIVES OF THE REMEDIAL INVESTIGATION

In addition to refining the previous understanding of Site conditions, the objectives of the RI are:

- The characterization of the nature and extent of the presence of chemicals originating from the Site.
- The collection of sufficient data on the hydrogeologic conditions and other physical characteristics of the Site and affected off-site areas necessary for the engineering

action. To that end, each of the tasks described previously was completed in furtherance of the objectives of the Work Plan and OCC/Olin believe that the data are sufficient to develop appropriate remedial alternatives to address the environmental concerns identified.

1.2 102ND STREET LANDFILL SITE HISTORY

1.2.1 HISTORICAL BACKGROUND

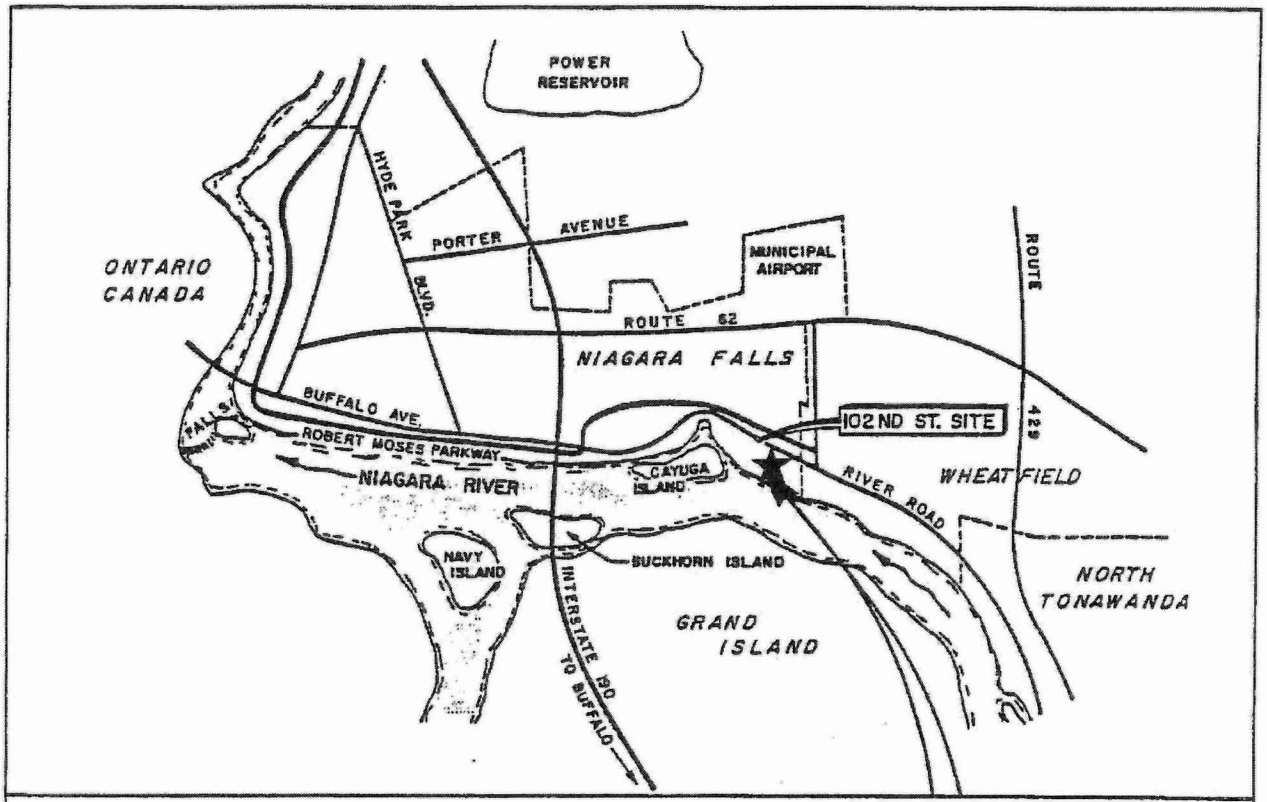
The present OCC portion of the Site was created by the combination of properties resulting from the merger of two firms (Niagara Alkali in 1955 and Oldbury Electrochemical in 1956) with the Hooker Electrochemical Company (Hooker). Site ownership has been continuous by Hooker since that time, although the company name changed to Hooker Chemical Corporation (1958), Hooker Chemicals & Plastics (1974) and OCC (1982). The historic ownership of the OCC property including the dates of acquisition of various parcels is as follows:

Company	Date of Acquisition
° Oldbury Electrochemical Company	1924
	1927
° Hooker Electrochemical Company	1947 (access acquired - 1942)
° Niagara Alkali	1945

Figure 1.2 shows the historical progression of Site ownership.

The Olin portion of the Site was acquired by its predecessor company, Mathieson Chemical Corporation, in 1948. Site ownership has been continuous although the company name changed to Olin Mathieson Chemical Corporation in 1954 and Olin Corporation in 1969.

Estimates of wastes disposed at the Site are presented in Tables 1.2 and 1.3 for Olin and OCC, respectively. The quantities reported on these tables represent all waste materials known or believed to have been deposited at the Site based on company records and residue factors. These tabulations are based on a very limited amount of documented information and, consequently, the quantifications are essentially best estimates.



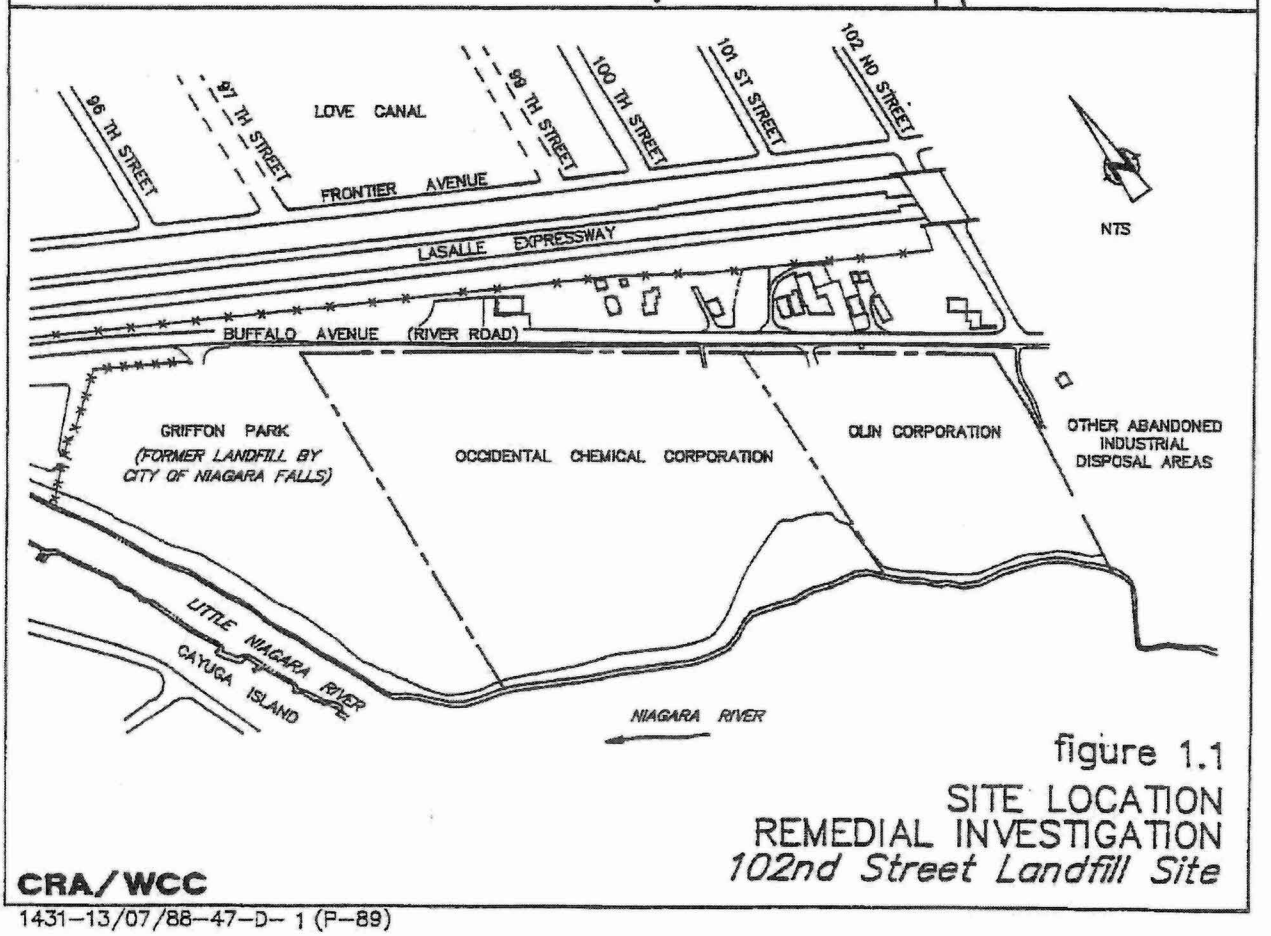


figure 1.1
SITE LOCATION
REMEDIAL INVESTIGATION
102nd Street Landfill Site

CRA/WCC

1431-13/07/88-47-D- 1 (P-89)

EXHIBIT E

EXECUTIVE SUMMARY

In the fall of 1957, approximately 400 metal drums containing hexachlorobenzene (HCB) and 100 tons of alpha, beta hexachlorocyclohexane cake (BHC) from the Olin Niagara Falls Plant were disposed of on what is now the Batrouny Property portion of the Gibson Site (see Figure 1). These wastes were reportedly covered by Olin with topsoil. Other fill materials, including demolition rubble, flyash, and soil were placed over the wastes by others.

As shown on Figure 2, the Batrouny property portion of the Gibson Site (hereafter referred to as "site") is irregular in shape and occupies slightly more than 1 acre. The site is bounded on the north and east by the Cayuga Creek, a tributary of the Niagara River, on the west by Tuscarora Road, and on the south by a Niagara Mohawk Power Corporation right-of-way. An occupied single-family dwelling and detached garage are located in the western portion of the site.

For purposes of this feasibility study and in order to delineate boundaries of various remedial activity zones, the following are defined:

- Remediation zone - A portion of the site that includes previously documented (through chemical analysis) areas of BHC and/or HCB wastes or contamination on the site, as delineated on Figure 3. The remediation zone also encompasses most portions of the site and contiguous properties that may require encroachment in order to construct certain remedial components discussed in connection with this feasibility study.

- Monitoring zone - An additional area depicted on Figure 3 for possible future monitoring and remediation as may be required.

Reportedly, all wastes deposited at the site are in solid form, including the HCB contained in the drums. These BHC wastes were residues from Olin's manufacturing process which process produced a mixture of isomeric forms, including the alpha, beta, delta, and gamma isomers of BHC. The HCB was a by-product of a Terrachlor (pentachloronitrobenzene) manufacturing process. Production of these compounds was terminated in the mid-1950's.

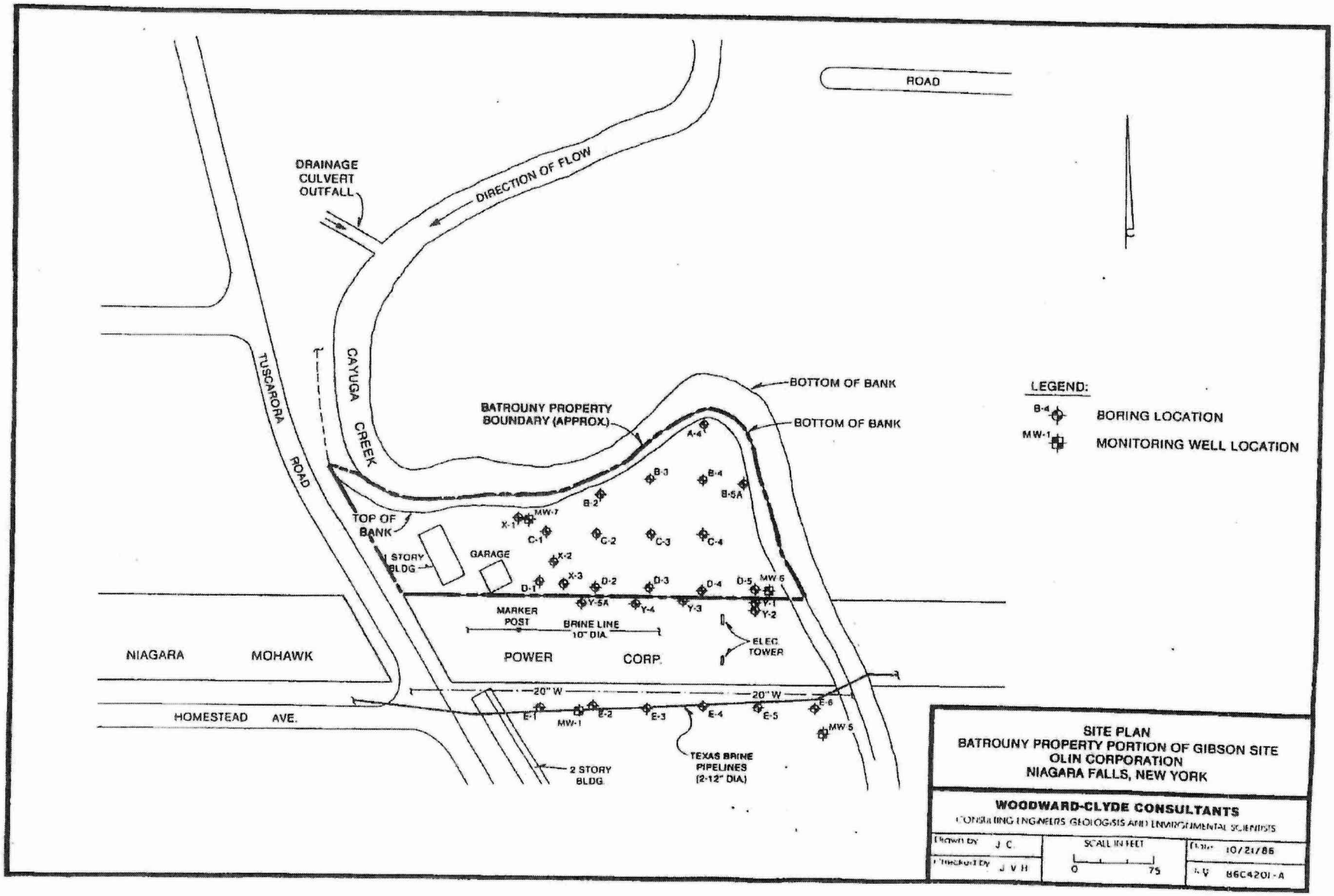

ROAD
DRAINAGE CULVERT OUTFALL
DIRECTION OF FLOW
CAYUGA CREEK
TUSCARORA ROAD
BOTTOM OF BANK
BATROUNY PROPERTY BOUNDARY (APPROX.)
BOTTOM OF BANK
TOP OF BANK
1 STORY BLDG.
GARAGE
MARKER POST
BRINE LINE 10" DIA.
ELEC TOWER
NIAGARA MOHAWK POWER CORP.
HOMESTEAD AVE.
20" W
20" W
2 STORY BLDG.
TEXAS BRINE PIPELINES (2-12" DIA.)
LEGEND:
B-4 BORING LOCATION
MW-1 MONITORING WELL LOCATION
SITE PLAN
BATROUNY PROPERTY PORTION OF GIBSON SITE
OLIN CORPORATION
NIAGARA FALLS, NEW YORK
WOODWARD-CLYDE CONSULTANTS
CONSULTING ENGINEERS GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS
Drawn By J C
Checked By J V H
SCALE IN FEET
0 75
Date 10/21/86
W.O. 86C4201-A

FIGURE 2

EXHIBIT F

EXECUTIVE SUMMARY

Olin Corporation (Olin) contracted IT Corporation (IT) to conduct a remedial investigation (RI) at the Industrial Welding Site, Niagara Falls, New York. The RI has been conducted as prescribed in Olin's May 15, 1987 Plan of Investigation approved by the New York State Department of Environmental Conservation (NYSDEC). The primary objectives of this investigation were to:

- Identify the specific compounds that pose a hazard to the public health or the environment.
- Identify the characteristics and extent of any contamination at the site, including surface water, ground water, and soil contamination.
- Characterize any migration pathways from the site, including geologic and hydrologic parameters that affect the direction and rate of migration.
- Define the geologic and hydrogeologic environments at the site.
- Characterize the surface and subsurface soil quality at the site.
- Characterize the ground water quality at the site.
- Determine the distribution of waste material.

The Olin-Mathieson Corporation, a predecessor of Olin, operated a pilot research laboratory and process plant at the site from about 1952 until 1956. In 1964, the site was sold to Niagara Community College, and it was subsequently transferred to Niagara County. A portion of the site currently houses the Cerebral Palsy Association of Niagara County, Inc. (Cerebral Palsy Association) Rehabilitation Center, and the remainder of the site is vacant. The adjacent property occupied by the American Legion Hall was formerly owned by Olin.

The Industrial Welding Site occupies approximately 10 acres and lies immediately west of Packard Road and approximately ½ mile north of Buffalo Road in Niagara Falls, New York. About 6 acres of the eastern side of the site is a flat, open grassy area. The rest is covered by mounds of rubble, with the Cerebral Palsy Association building in the northwest quadrant of the site.

1.2 SITE DESCRIPTION AND BACKGROUND

The Industrial Welding Site is approximately 10 acres and lies immediately west of Packard Road and approximately ½ mile north of Buffalo Road in Niagara Falls, New York. The site is near the currently operating Olin Plant and was the site of a laboratory facility from 1952 until 1956. The laboratory buildings were torn down, leaving the concrete foundations. The eastern portion of the site was used for disposing of building demolition debris and process wastes, filling an existing depression.

The eastern site was originally a marsh area that was possibly formed from a cut-off meander channel from Gill Creek. Two shallow depressions drained the site, carrying runoff to both the northeast and southeast toward Gill Creek. As a result of the landfilling, the site's topography has been leveled and presently slopes gently to the east. About 6 acres in the eastern side of the site is a flat, open grassy area. The rest is covered by mounds of soils, fly ash, and demolition debris. Most of the debris mounds at the site are located near the foundations of the old laboratory buildings.

The ownership and usage of the site have varied over the past 60 years. The High Energy Fuels (HEF) Division of the Olin-Mathieson Corporation operated a pilot research laboratory and process plant at the site from 1952 until 1956. When the HEF Division was disbanded, the buildings were razed. The eastern portion of the site was used for landfilling of other demolition and construction debris and process waste, leveling the eastern half of the site. Manifests of salt dirt (brine waste) and general scrap from 1958 to 1960 total 3,742 cubic yards (Cummings, 1981b). Additionally, there are verbal reports of disposal of fly ash, concrete debris, and building rubble from a building possibly contaminated with hexachlorocyclohexane (BHC) (Cummings, 1981a). The situation at the site between 1956 and 1958 is unknown; however, use of the site for process waste disposal was restricted to the years 1958 to 1960 (Cummings, 1981b).

In 1964, Olin sold the site to Niagara Community College, and it was subsequently transferred to Niagara County. Niagara County has used the site to house the

Cerebral Palsy Association of Niagara County, Inc. (Cerebral Palsy Association) Rehabilitation Center. This center is located in the northwest quadrant of the site.

1.3 PREVIOUS INVESTIGATIONS

The site was reported as a waste disposal site in the Interagency Task Force and Eckardt Surveys in 1979 and in the Superfund report in 1980 (Bellotti, 1982). One soil sample was obtained by Niagara County Department of Health for analysis to characterize the hazard characteristics of the waste. Analytes found in the sample were mercury, BHC, and hexachlorobenzene (HCB) (Advanced Environmental Systems, Inc., 1981). Olin spokesmen indicated that the low concentrations and restricted suite of organic compounds, and the levels of mercury found were consistent with the known character of materials deposited at the site (Cummings, 1981a).

Since the notification in 1979 determined that the site is a waste disposal site, there have been several site investigations to establish the location of waste materials and the hydrogeological characteristics of the site.

In 1982, Olin issued an in-house site investigation that was conducted to determine the areal extent and depth of the waste materials, the chemical characteristics of the materials, and the hydrogeological characteristics of the site. During this investigation, 47 soil borings were placed to establish the depth to the native soil, bedrock, location of wastes, and the position of the local water table. In addition, six undisturbed samples were recovered during this investigation to determine the vertical hydraulic conductivity (Bellotti, 1982).

Following the issuance of Olin's Final Hydrogeological Report (Bellotti, 1982), the NYSDEC issued a review of the report. NYSDEC is of the opinion that there were several data gaps and Olin was requested to respond to concerns raised by the state (Buechi, 1982 and Krajewski, 1983). As part of a state-wide program, the state contracted Engineering-Science, Inc. to prepare a hazardous waste disposal site evaluation. This assessment was based on the Hazard Ranking System score and recommended a second phase of investigation (Engineering-Science, 1984).

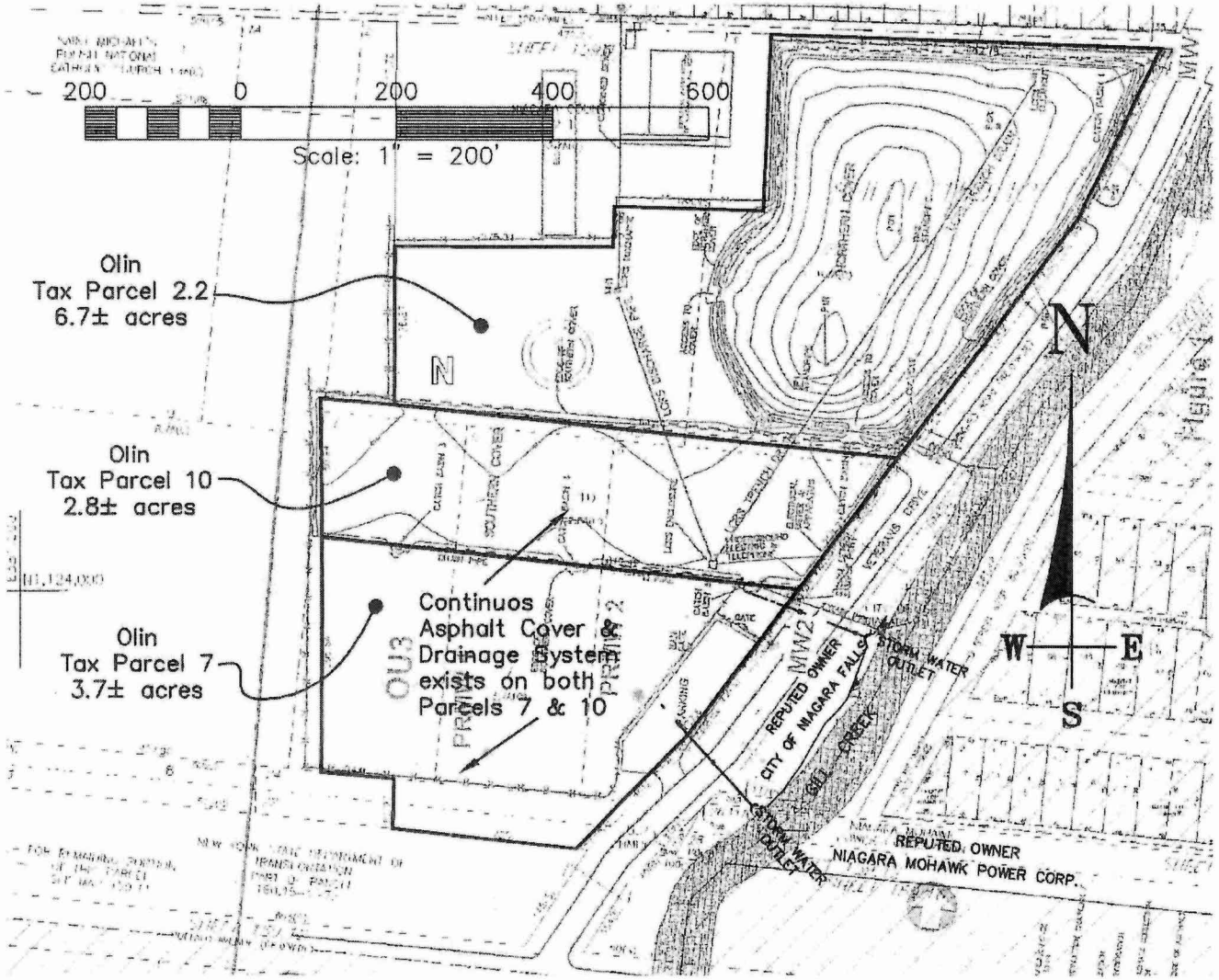


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EXHIBIT G


Olin – Niagara Falls Plant Site
© 2015 Google

EXHIBIT H

Olin's principal business in Niagara Falls has always centered around the electrolytic production of chlorine and caustic soda from rock salt (sodium chloride) using various modifications of the mercury-cell/chlor-alkali process. Mercury cells were once operated on both plant sites, but have been confined to Plant 2 for the past 30 years. Plant 1 has been largely inactive since the shutdown of calcium hypochlorite (HTH™) production in September 1982, and is presently used only for warehousing and groundwater treatment.

Despite the historical predominance of inorganic chemical production at Olin's Niagara Falls locations, several organic chemicals, including trichlorobenzene, trichlorophenol, and BHC (hexachlorocyclohexane), were manufactured in the section of Plant 2 between Alundum Road and Gill Creek between 1950 and 1956.

Investigations conducted by Olin since 1978 have documented the presence of mercury and a variety of organic chemicals at parts-per-billion (ppb) to parts-per-million (ppm) concentrations in soils and shallow groundwater at Plant 2, and in cooling water produced from deeper wells at Plant 1. Since May 1984, Olin has treated ground water withdrawn from the bedrock production wells using activated carbon. Du Pont entered into an agreement with Olin in February 1985 under which Olin's production wells and treatment system are operated as part of Du Pont's ground water remediation program.

In the early 1980's, the EPA commissioned an effort to estimate individual facility chemical contributions to the Niagara River directly, and via ground water infiltration to the Fall Street Tunnel (Koszalka, et. al., 1985). Both this study and a more recent one conducted for the City of Niagara Falls (O'Brien and Gere, 1987) have claimed a potential for offsite chemical migration in groundwater from the Olin Buffalo Avenue plants.

These assertions were made based on a very limited review of available data. In 1988, Olin contracted Woodward-Clyde Consultants (WCC) to review all existing data related to soil and groundwater contamination at the Buffalo Avenue Plant and

EXHIBIT I

ANNEX F.

Niagara Falls Products

	Caustic Soda & Liquid Chlorine	HTH	Ammonia	Sodium Methylate	Sodium Chlorite	Other	Comments
1979	X	X		X	X		
1978	X	X		X	X	Sodium Chlorate (4yr)	277 T/day NaOH; 252 T/day Cl_2; 60 T/day HTH (30 T/day H tablet) $NaClO_2$ 16,000 lb/day NaMeth, 20,000 lb/day (dryer 13,000 lb/day)
1977	X	X		X	X		
1976	X	X		X	X		Hydrated HTH started
1975	X	X		X	X		
1974	X	X		X	X		
1973	X	X		X	X		
1972	X	X		X	X		
1971	X	X		X	X		
1970	X	X		X	X		
1969	X	X		X	X		
1968	X	X		X	X		
1967	X	X		X	X		
1966	X	X		X	X		Na metal discontinued on methylate
1965	X	X		X	X		1st Hg amalgam meth, react
1964	X	X		X	X		
1963	X	X		X	X		
1962	X	X		X	X		Shutdown NH_3
1961	X	X		X	X		Stationary cells (58) 252 T/day Cl_2; 277 T/day HTH @ 36 T/day

APPENDIX F.

	Caustic Soda	Bleaching Powder	Liquid Chlorine	HTH^R	Ammonia	Sodium Methylate	Sodium Chlorite	Other	Notes
1960	X		X	X	X	X	X		
1959	X		X	X	X	X	X		
1958	X		X	X	X	X	X		Gx Prod. 1958 - 21,900 - 47,800 #/Mo.
1957	X		X	X	X	X	X	Diglycollic Di-hydrazide	139.0 T/D NaOH; 125.0 T/D Cl_2
1956	X		X	X	X	X	X		BHC Prod. 1956 - 573. - 818 T/Mo. August 6, 1956 BHC Exp.
1955	X		X	X	X	X	X		BHC Ave. Prod. - 550.3 T/Mo. Trichlorpphenol Prod. @ 25 - 43 T/ Mo. Aug - Dec 1955
1954	X		X	X	X	X	X	Trichlorophenol	BHC Ave. Prod. 1954 - 425 T/Mo.
19[illegible]	X		X	X	X	X	X		BHC Ave. Prod. 1953 - 296.8 T/Mo.
1952	X		X	X	X	X	X		Prod. of 36% Commenced BHC Ave. Prod. 1952 540.8 T/Mo. Tablet HTH^R @ 1 T/Day MHS Prod. 1942 13.3 - 43.6 T/Mo.
1951	X		X	X	X	X	X		BHC Ave. Prod. 1951 - 166 - 478 T/Mo.
1950	X		X	X	X	X	X	Benzene Hexachloride Trichlorobenzene	BHC Prod. 22 - 118 T/Mo. June - Dec 1950
1949	X		X	X	X	X	X		
1948	X		X	X	X	X	X		
1947	X		X	X	X	X	X		
1946	X		X	X	X	X	X		
1945	X	X	X	X	X	X	X		Bleaching Powder Ended HTH^R @ 6.0 T/Day
1944	X	X	X	X	X	X	X		
1943	X	X	X	X	X	X	X		
19[illegible]	X	X	X	X	X	X	X		
1941	X	X	X	X	X	X	X		Meth. @ 1000 Lb/Day (W/Na Metal) $NaClO_2$ 2000 Lb/Day

EXHIBIT J

TABLE 1.2

OLIN CORPORATION CHEMICAL INVENTORY
102ND STREET LANDFILL SITE **

The following inventory of chemicals was developed from all available records, the Interagency Task Force (ITF) Report on Hazardous Waste (1978) and additional information.

INORGANICS[1]

"Black Cake"[2]	19,760 cubic yards
Graphite	742 tons
Concrete	6,625 tons
Flyash	5,472 truckloads
Lime Sludge	22,695 cubic yards
Brine Sludge	15,899 cubic yards

ORGANICS[3]

Benzene Hexachloride (BHC) Trichlorophenol (TCP) Trichlorobenzene (TCB) and Benzene	295 truckloads
V-Tetrachlorobenzene	310,550 gallons

(1) Disposal quantities of inorganic were generally based on production factors rather than actual recorded amounts. Inorganics can roughly be translated to tonnages through the use of the conversion factors. Estimated tonnages are as follows:

"Black Cake"	18,673 tons
Graphite	742 tons
Concrete	6,625 tons
Lime Sludge	22,978 tons
Brine Sludge	67,186 tons
	116,204 tons (excluding flyash)

(2) "Black Cake" resulted from the production of sodium chlorite and had a dry basis composition approximately as follows:

Approximately 2% soluble material (sodium chloride, sodium chlorite, sodium chlorate)

18% carbon

80% calcium carbonate/calcium hydroxide

TABLE 1.2

OLIN CORPORATION CHEMICAL INVENTORY
102ND STREET LANDFILL SITE

(3) Available records indicate truckload shipments of these materials to the landfill. There is no way to determine the specific quantities of the different chemicals, however, there is also no reason to believe they constitute a mixture. Rather, it is believed they were simply loads of some bulk and some drummed material on the same truck. Tetrachlorobenzene is a separate known quantity. Trichloroanisole was a probable impurity in one of the production processes. It was not disposed of as a separate item.

All the organic materials are solids at STP except benzene and 1,2,4-trichlorobenzene. The quantity of benzene and 1,2,4-trichlorobenzene (if the 1,2,4-isomer was disposed of at the site) are unknown.

The organic disposal can roughly be translated to tonnages through use of the conversion factors of eight cubic yards per truckload and a density of 0.85 grams per cubic centimer (g/cc). Tetrachlorobenzene has a density of 1.8 g/cc.

BHC, TCP, TCB and Benzene	2,000 tons
Tetrachlorobenzene	2,327 tons
	4,327 tons

** Previously submitted with the Work Plan approved by the United States District Court for the Western District of New York in 1984.

EXHIBIT K

(1-8)
(DO NOT USE)

(30)

FORM B: DISPOSAL SITE INFORMATION

COMPLETE THIS FORM FOR EVERY SITE (INCLUDING THE LOCATION OF THIS FACILITY AS ONE SITE) USED FOR THE DISPOSAL OF PROCESS WASTES GENERATED BY THIS FACILITY SINCE 1950.

Company Name: Olin Corporation
Facility Name: ~~Olin Chemicals Group Niagara Falls Plant~~
Name of Site: Vicinity of Pine & Tuscarora Ave.
Address of Site: Pine & Tuscarora Ave.
no. street
Niagara Falls, New York 14304
city state zip code

Name of Owner (while used by facility): Unknown
Address:
no. street

city state zip code

Current Owner (if different from above): Unknown
Address:
no. street

city state zip code

1. Location (1= the property on which facility is located; 2= off-site)..... [2] (10)
2. Ownership at time of use (1= company ownership; 2=private but not company ownership) 3=public ownership) .... [2] (11)
3. Current status (1= closed; 2= still in use; 9=don't know) .... [1] (12)
   IF CLOSED, specify year closed .... 19[5][8] (13-14)
4. Year first used for process waste from this facility .... 19[5][4] (15-16)
5. Year last used for process waste from this facility (enter "79" if still in use) .... 19[5][8] (17-18)
6. Total amount of process waste from this facility disposed at site:
   ~~thousand gallons .... (19-26)~~
   hundred tons .... (27-33)
   ~~thousand cubic yards .... (34-41)~~
7. Specify type(s) of disposal method(s) used at site and whether method is still in use (1=currently in use; 2=no longer in use; 3=never used; 9=don't know)
   - landfill, mono industrial waste .... [3] (42)
   - landfill, mixed industrial waste .... [2] (43)
   - landfill, drummed waste .... [2] (44)
   - landfill, municipal refuse co-disposed ... [3] (45)
   - pits/ponds/lagoons .... [3] (46)
   - deep well injection .... [3] (47)
   - land farming .... [3] (48)
   - incineration .... [3] (49)
   - treatment (eg. neutralizing) .... [3] (50)
   - sent to reclaimer ~~reprocessing/recycling~~ .... [3] (51)
   - other (specify) ____________ .... [3] (52)
8. Users of this site (1=this facility; 2=this facility and other company facilities only; 3=this company and others; 9=don't know) .... [9] (53)

LIST NAMES AND ADDRESSES OF OTHER KNOWN USERS BELOW

FORM B CONTINUED ON SECOND PAGE

[1] (80)

FORM F Page 2

Company Name: Olin Corporation

Facility Name: Olin Chemicals Group Niagara Falls Plant

Site Name: Vicinity of Pine & Tuscarora Ave.

(1-8) (DO NOT USE)

(31)

9. Components (or characteristics) of process waste from this facility disposed at site: (1=present in waste; 2=not present in waste; 9=don't know)

FILL IN EVERY BLOCK SPACE

Acid solutions, with pH<3	9	(10)
pickling liquor	2	(11)
metal plating waste	2	(12)
circuit etchings	2	(13)
inorganic acid manufacture	2	(14)
organic acid manufacture	2	(15)
Base solutions, with pH>10 12	9	(16)
caustic soda manufacture	2	(17)
nylon and similar polymer generation	2	(18)
scrubber residual	2	(19)
Heavy metals & trace metals (bonded organically & inorganically)	9	(20)
arsenic, selenium, antimony	2	(21)
mercury	9	(22)
iron, manganese, magnesium	9	(23)
zinc, cadmium, copper, chromium (trivalent)	2	(24)
chromium (hexavalent)	2	(25)
lead 50	2	(26)
Radioactive residues, >8 pico curies/~~liter~~ gram	2	(27)
uranium residuals & residuals for UF_6 recycling	2	(28)
lathanide series elements and rare earth salts	2	(29)
phosphate slag	2	(30)
thorium	2	(31)
radium	2	(32)
other alpha, beta & gamma emitters	2	(33)
Organics	1	(34)
insecticides ~~pesticides~~ & intermediates	1	(35)
herbicides & intermediates	9	(36)
fungicides & intermediates	2	(37)
rodenticides & intermediates	2	(38)
halogenated aliphatics	2	(39)
halogenated aromatics	1	(40)
acrylates & latex emulsions	2	(41)
PCB/PBB's	2	(42)
amides, amines, imides	2	(43)
plastizers	2	(44)
resins	2	(45)
elastomers	2	(46)
solvents polar (except water)	9	(47)
carbontetrachloride	2	(48)
trichloroethylene	2	(49)
other solvents nonpolar	9	(50)
solvents halogenated aliphatic	2	(51)
solvents halogenated aromatic	9	(52)
oils and oil sludges	9	(53)
esters and ethers	9	(54)
alcohols	2	(55)
ketones & aldehydes	2	(56)
dioxins	9	(57)
Inorganics	9	(58)
salts	9	(59)
mercaptans	2	(60)
Misc.	2	(61)
pharmaceutical wastes	2	(62)
paints & pigments	2	(63)
catalysts (eg. vanadium, platinum, palladium)	2	(64)
asbestos	2	(65)
shock sensitive wastes (eg. nitrated toluenes)	2	(66)
air water reactive wastes (eg. P_4, aluminum chloride)	2	(67)
wastes with flash point below 100° F	2	(68)

FORM B: DISPOSAL SITE INFORMATION

(DO NOT USE) (1-8)

COMPLETE THIS FORM FOR EVERY SITE (INCLUDING THE LOCATION OF THIS FACILITY AS ONE SITE) USED FOR THE DISPOSAL OF PROCESS WASTES GENERATED BY THIS FACILITY SINCE 1950. (32)

Company Name: Olin Corporation
Facility Name: Olin Chemicals Group Niagara Falls Plant
Name of Site: Vitullo
Address of Site: 3640 Packard Road
no. street

Niagara Falls, New York 14303
city state zip code

Name of Owner (while used by facility): J. Vitullo Trucking Co.
Address: 3640 Packard Road
no. street

Niagara Falls, New York 14303
city state zip code

Current Owner (if different from above): J. Vitullo Trucking Co.
Address: 3411 Stoney Point Road
no. street

Grand Island, New York 14072
city state zip code

1. Location (1= the property on which facility is located; 2= off-site) 2 (10)
2. Ownership at time of use (1= company ownership; 2=private but not company ownership) 3=public ownership) 2 (11)
3. Current status (1= closed; 2= still in use; 9=don't know) 9 (12)
   IF CLOSED, specify year closed 19 (13-14)
4. Year first used for process waste from this facility 1958 (15-16)
5. Year last used for process waste from this facility (enter "79" if still in use) 1958 (17-18)
6. Total amount of process waste from this facility disposed at site:
   ~~thousand gallons ..... (19-26)~~
   hundred tons ..... 0 (27-33) *
   ~~thousand cubic yards ..... (34-41)~~
7. Specify type(s) of disposal method(s) used at site and whether method is still in use (1=currently in use; 2=no longer in use; 3=never used; 9=don't know)

landfill, mono industrial waste	9	(42)
landfill, mixed industrial waste	9	(43)
landfill, drummed waste	9	(44)
landfill, municipal refuse co-disposed	9	(45)
pits/ponds/lagoons	9	(46)
deep well injection	3	(47)
land farming	3	(48)
incineration	3	(49)
treatment (eg. neutralizing)	3	(50)
sent to reclaimer ~~reprocessing/recycling~~	3	(51)
other (specify) _____	9	(52)

8. Users of this site (1=this facility; 2=this facility and other company facilities only; 3=this company and others; 9=don't know) 9 (53)

LIST NAMES AND ADDRESSES OF OTHER KNOWN USERS BELOW

* Less than 100 tons

FORM B CONTINUED ON SECOND PAGE

FORM B Page 2

(1-8)
(DO NOT USE)

Company Name: Olin Corporation

Facility Name: Olin Chemicals Group Niagara Falls Plant

Site Name: Vitullo (33)

9. Components (or characteristics) of process waste from this facility disposed at site: (1=present in waste; 2=not present in waste; 9=don't know)

FILL IN EVERY BLOCK SPACE

Acid solutions, with pH<3	2	(10)
pickling liquor	2	(11)
metal plating waste	2	(12)
circuit etchings	2	(13)
inorganic acid manufacture	2	(14)
organic acid manufacture	2	(15)
Base solutions, with pH>~~10~~ 12	2	(16)
caustic soda manufacture	2	(17)
nylon and similar polymer generation	1	(18)
scrubber residual	2	(19)
Heavy metals & trace metals (bonded organically & inorganically)	1	(20)
arsenic, selenium, antimony	2	(21)
mercury	1	(22)
iron, manganese, magnesium	1	(23)
zinc, cadmium, copper, chromium (trivalent)	2	(24)
chromium (hexavalent)	2	(25)
lead 50	2	(26)
Radioactive residues, >~~1~~ pico curies/~~liter~~ gram	2	(27)
uranium residuals & residuals for UF_6 recycling	2	(28)
lathanide series elements and rare earth salts	2	(29)
phosphate slag	2	(30)
thorium	2	(31)
radium	2	(32)
other alpha, beta & gamma emitters	2	(33)
Organics	2	(34)
~~pesticides~~ herbicides & intermediates	2	(35)
herbicides & intermediates	2	(36)
fungicides & intermediates	2	(37)
rodenticides & intermediates	2	(38)
halogenated aliphatics	2	(39)
halogenated aromatics	2	(40)
acrylates & latex emulsions	2	(41)
PCB/PBB's	2	(42)
amides, amines, imides	2	(43)
plastizers	2	(44)
resins	2	(45)
elastomers	2	(46)
solvents polar (except water)	2	(47)
carbontetrachloride	2	(48)
trichloroethylene	2	(49)
other solvents nonpolar	2	(50)
solvents halogenated aliphatic	2	(51)
solvents halogenated aromatic	2	(52)
oils and oil sludges	2	(53)
esters and ethers	2	(54)
alcohols	2	(55)
ketones & aldehydes	2	(56)
dioxins	2	(57)
Inorganics	1	(58)
salts	1	(59)
mercaptans	2	(60)
Misc.	2	(61)
pharmaceutical wastes	2	(62)
paints & pigments	2	(63)
catalysts (eg. vanadium, platinum, palladium)	2	(64)
asbestos	2	(65)
shock sensitive wastes (eg. nitrated toluenes)	2	(66)
air water reactive wastes (eg. P_4, aluminum chloride)	2	(67)
wastes with flash point below 100° F	2	(68)

Material was brine sludge

FORM B. DISPOSAL SITE INFORMATION

(DO NOT USE) (1-8)

COMPLETE THIS FORM FOR EVERY SITE (INCLUDING THE LOCATION OF THIS FACILITY AS ONE SITE) USED FOR THE DISPOSAL OF PROCESS WASTES GENERATED BY THIS FACILITY SINCE 1950. (36)

Company Name: Olin Corporation
Facility Name: Olin Chemicals Group - Niagara Falls Plant
Name of Site: 102nd Street Landfill
Address of Site: Buffalo Avenue
no. street

Niagara Falls, New York
city state zip code

Name of Owner (while used by facility): Olin Corporation
Address: 2400 Buffalo Avenue P.O. Box 748
no. street

Niagara Falls, New York 14302
city state zip code

Current Owner (if different from above):
Address:
no. street

city state zip code

1. Location (1= the property on which facility is located; 2= off-site)..... 2 (10)
2. Ownership at time of use (1= company ownership; 2=private but not company ownership) 3=public ownership) 1 (11)
3. Current status (1= closed; 2= still in use; 9=don't know) 1 (12)
   IF CLOSED, specify year closed 19 7 0 (13-14)
4. Year first used for process waste from this facility 19 4 8 (15-16)
5. Year last used for process waste from this facility (enter "79" if still in use) 19 7 0 (17-18)
6. Total amount of process waste from this facility disposed at site:
   ~~thousand gallons~~ ..... (19-26)
   hundred tons 6 0 0 (27-33)
   ~~thousand cubic yards~~ ..... (34-41)
7. Specify type(s) of disposal method(s) used at site and whether method is still in use (1=currently in use; 2=no longer in use; 3=never used; 9=don't know)

landfill, mono industrial waste	3	(42)
landfill, mixed industrial waste	2	(43)
landfill, drummed waste	2	(44)
landfill, municipal refuse co-disposed	3	(45)
pits/ponds/lagoons	3	(46)
deep well injection	3	(47)
land farming	3	(48)
incineration	3	(49)
treatment (eg. neutralizing)	3	(50)
sent to reclaimer ~~reprocessing/recycling~~	3	(51)
other (specify) Bulk Disposal	2	(52)

8. Users of this site (1=this facility; 2=this facility and other company facilities only; 3=this company and others; 9=don't know) 1 (53)

LIST NAMES AND ADDRESSES OF OTHER KNOWN USERS BELOW

FORM B CONTINUED ON SECOND PAGE

1 (80)

FORM - Page 2

(DO NOT USE) (1-8)

Company Name: Olin Corporation

Facility Name: Olin Chemicals Group - Niagara Falls Plant (37)

Site Name: 102nd St. Landfill

9. Components (or characteristics) of process waste from this facility disposed at site: (1=present in waste; 2=not present in waste; 9=don't know)

FILL IN EVERY BLOCK SPACE

Acid solutions, with pH<3	9	(10)
pickling liquor	2	(11)
metal plating waste	2	(12)
circuit etchings	2	(13)
inorganic acid manufacture	2	(14)
organic acid manufacture	2	(15)
Base solutions, with pH>~~10~~ 12	9	(16)
caustic soda manufacture	1	(17)
nylon and similar polymer generation	2	(18)
scrubber residual	2	(19)
Heavy metals & trace metals (bonded organically & inorganically)	1	(20)
arsenic, selenium, antimony	2	(21)
mercury	1	(22)
iron, manganese, magnesium	1	(23)
zinc, cadmium, copper, chromium (trivalent)	1	(24)
chromium (hexavalent)	2	(25)
lead 50	2	(26)
Radioactive residues, >~~1~~ pico curies/~~liter~~ gram	2	(27)
uranium residuals & residuals for UF_6 recycling	2	(28)
lathanide series elements and rare earth salts	2	(29)
phosphate slag	2	(30)
thorium	2	(31)
radium	2	(32)
other alpha, beta & gamma emitters	2	(33)
Organics	1	(34)
insecticides ~~pesticides~~ & intermediates	1	(35)
herbicides & intermediates	1	(36)
fungicides & intermediates	2	(37)
rodenticides & intermediates	2	(38)
halogenated aliphatics	9	(39)
halogenated aromatics	1	(40)
acrylates & latex emulsions	2	(41)
PCB/PBB's	2	(42)
amides, amines, imides	2	(43)
plastizers	2	(44)
resins	2	(45)
elastomers	2	(46)
solvents polar (except water)	2	(47)
carbontetrachloride	2	(48)
trichloroethylene	2	(49)
other solvents nonpolar	1	(50)
solvents halogenated aliphatic	2	(51)
solvents halogenated aromatic	1	(52)
oils and oil sludges	2	(53)
esters and ethers	2	(54)
alcohols	2	(55)
ketones & aldehydes	2	(56)
dioxins	9	(57)
Inorganics	1	(58)
salts	1	(59)
mercaptans	2	(60)
Misc.	1	(61)
pharmaceutical wastes	2	(62)
paints & pigments	2	(63)
catalysts (eg. vanadium, platinum, palladium)	2	(64)
asbestos	2	(65)
shock sensitive wastes (eg. nitrated toluenes)	2	(66)
air water reactive wastes (eg. P_4, aluminum chloride)	2	(67)
wastes with flash point below 100° F	2	(68)

Misc. includes general scrap, flyash

FORM C: HAULER INFORMATION

(DO NOT USE) (1-5)

(38)

PROVIDE A COMPLETE LIST OF ALL FIRMS AND INDEPENDENT CONTRACTORS, INCLUDING THE COMPANY AND ITS AFFILIATES AND SUBSIDIARIES, USED TO REMOVE PROCESS WASTES FROM THIS FACILITY SINCE 1950.

Company Name: Olin Corporation

Facility Name: Olin Chemicals Group Niagara Falls Plant

Name of Firm or Contractor	Address	ICC # (If Known)	Years Used
J. Vitullo Trucking Company	3640 Packard Rd. Niagara Falls, N.Y. 14303	-	1929-1979
Cataract Trucking and Car Rental Corp.	1401 College Ave. Niagara Falls, N.Y.		1978
Lorber Trucking Service, Inc.	Kenmore, N.Y.		1978
Walter S. Kozdranski	1865 3rd Ave. Niagara Falls, N.Y.		1978
Sicoli & Massero	8525 Porter Ave. Niagara Falls, N.Y.		1978
Johnson	Niagara Falls or Tonowanda		1978
Thomas Carter Trucking & Excavating	N. Ridge Rd. Cambria, N.Y.		1978
C. H. Heist Corp.	505 Fillmore Ave Cheektowaga, N.Y.		1978
Ross Steel Erection Co.,Inc.	4237 Pine Ave. Niagara Falls, N.Y.		1978
Wizard Method Inc.	555 River Rd North Tonawanda, N.Y.		1978
Advance Environmental Technology	520 Speedwell Ave. Morris Plains, N.J.		1978
Chemical Leaman Tank Lines, Inc.	P.O. Box 200 Downington, Pa. 19335		1978-1979
Frontier Chemical Waste Process, Inc.	4626 Royal Ave. Niagara Falls, N.Y. 14303		1978-1979

COMPLETE THIS FORM FOR EACH FIRM OR INDEPENDENT CONTRACTOR (INCLUDING YOUR OWN COMPANY, ITS AFFILIATES & SUBSIDIARIES) WHO RECEIVED PROCESS WASTE FROM THIS FACILITY SINCE 1950 AND TOOK IT TO AN UNKNOWN LOCATION

(DO NOT USE) (39)

Company Name: Olin Corporation
Facility Name: Olin Chemicals Group Niagara Falls Plant
Name of Hauling Firm/Contractor: J. Vitullo Trucking Company
Address: (no.) 3460 (street) Packard Rd.
(city) Niagara Falls (state) N.Y. (zip code)

1. Year first used ..... 19 [2 9] (10-11)
2. Year last used (enter "79" if still in use) ..... 19 [7 9] (12-13)
3. Total amount of process waste hauled from this facility:
   ~~thousand-gallons~~ [| | | | | | |] (14-21)
   hundred tons [| | | | | 5] * (22-28)
   ~~thousand-cubic-yards~~ [| | | | | | |] (29-36)
4. Components (or characteristics) of process waste from this facility disposed at site: (1=present in waste; 2=not present in waste; 9=don't know): FILL IN EVERY BLOCK SPACE

Acid solutions, with pH<3	2	(37)
pickling liquor	2	(38)
metal plating waste	2	(39)
circuit etchings	2	(40)
inorganic acid manufacture	2	(41)
organic acid manufacture	2	(42)
Base solutions, with pH>10 ~~12~~	2	(43)
caustic soda manufacture	1	(44)
nylon and similar polymer generation	2	(45)
scrubber residual	2	(46)
Heavy metals & trace metals (bonded organically & inorganically)	1	(47)
arsenic, selenium, antimony	2	(48)
mercury	1	(49)
iron, manganese, magnesium	1	(50)
zinc, cadmium, copper, chromium (trivalent)	2	(51)
chromium (hexavalent)	2	(52)
lead	2	(53)
Radioactive residues, ~~>3 pico curies/liter~~ 2.50 pico curie/gram	2	(54)
uranium residuals & residuals for UF_6 recycling	2	(55)
lathanide series elements and rare earth salts	2	(56)
phosphate slag	2	(57)
thorium	2	(58)
radium	2	(59)
other alpha, beta & gamma emitters	2	(60)
Organics	1	(61)
insecticides - pesticides & intermediates	1	(62)
herbicides & intermediates	2	(63)
fungicides & intermediates	2	(64)
rodenticides & intermediates	2	(65)
halogenated aliphatics	2	(66)
halogenated aromatics	1	(67)
acrylates & latex emulsions	2	(68)
PCB/PBB's	2	(69)
amides, amines, imides	2	(70)
plastizers	2	(71)
resins	2	(72)
elastomers	2	(73)
solvents polar (except water)	2	(74)
carbontetrachloride	2	(75)
trichloroethylene	2	(76)
other solvents nonpolar	2	(77)
solvents halogenated aliphatic	2	(78)
solvents halogenated aromatic	2	(79)
oils and oil sludges	2	(10)
esters and ethers	2	(11)
alcohols	2	(12)
ketones & aldehydes	2	(13)
dioxins	9	(14)
Inorganics	1	(15)
salts	1	(16)
mercaptans	9	(17)
Misc	1	(18)
pharmaceutical wastes	2	(19)
paints & pigments	2	(20)
catalysts (eg. vanadium, platinum, palladium)	2	(21)
asbestos	2	(22)
shock sensitive wastes (eg. nitrated toluenes)	2	(23)
air water reactive wastes (eg. P_4, aluminum chloride)	2	(24)
wastes with flash point below 100° F	2	(25)

See Reverse for notes.

EXHIBIT L

I EXECUTIVE SUMMARY

A Remedial Investigation (RI) was conducted at the Gibson Site in Niagara Falls, New York. The overall objective of the investigation was to assess the type and degree of contamination from previous disposal at the site and, thereby, provide a data base which Olin can use for planning site remediation activities.

Olin wastes that were disposed of at the Gibson Site were reported to be in the form of approximately 403 buried drums of hexachlorobenzene (HCB), and 101 truck loads of hexachlorocyclohexane (benzenehexachloride or BHC) cake primarily of the α and β isomers. In March 1985, the State of New York and Olin mutually agreed to a stipulation which provides for a site specific study and appropriate remedial action.

The remedial investigation consisted of four phases that included a metal detection survey, soil borings and analysis, ground-water monitoring, and collection of ground-water samples for chemical analysis. The metal detection survey, soil boring program, installation of monitoring wells, and chemical analysis of the soil samples were completed in May, June, and July 1985. The last ground-water sampling was completed in June 1986.

The most significant area of buried metal identified was located on the north side of the site. This area, approximately 2600 square feet in size, is probably the location of the 403 buried drums. The borings disclosed a top layer of fill material at the site which varies in composition from cake waste, flayash, lime grit, construction debris, and mixed natural soils. The cake, or soils contaminated with cake, was found primarily in an area of approximately 27,400 square feet on the north side of the site in the same general area of the buried drums. The cake waste is up to 6 feet thick, and has a volume of roughly 8,500 cubic yards, including the associated overburden which averages 1 foot in thickness. Underlying all of the fill material, including the cake, is a stratum of red-brown clay which forms an aquiclude across the site. Bedrock was encountered at a depth of approximately 20 feet.

Ground water was encountered generally less than 5 feet below the ground surface. The water table slopes towards the east and northeast, following both the ground surface and the surface of the aquiclude. The permeability of the saturated zone above the aquiclude is 1.69×10^{-5} cm/sec as measured by field permeability tests. Permeability of the aquiclude, measured by laboratory permeability tests, averages 6×10^{-8} cm/sec. Ground-water movement across the site is, therefore, slow and restricted in this upper saturated zone.

Of the 27 soil samples chemically analyzed, seven samples showed detectable levels of BHC contamination. One of the samples which indicated contamination was from the south side of the site and the rest were from the north side of the site where the cake and buried drums are located. The maximum level of contamination in the ground water was 140 parts per billion (ppb) β-BHC, with all other analyses indicating at or below 18 ppb BHC. Chemical analyses of ground-water samples for other priority pollutants indicated concentrations generally below the limits of detection. The results of the analysis for heavy metals were also below the limits of detection except for trace concentrations of copper, lead, mercury, nickel, and silver. Zinc had the highest concentration at 22.7 ppb.

Further study planned at the Gibson Site by Olin includes a field exploration program to investigate the contents of the buried drums. Although planning is underway, no specific start date has been established.

EXHIBIT M

TABLE 1.2

OLIN CORPORATION CHEMICAL INVENTORY
102ND STREET LANDFILL SITE **

The following inventory of chemicals was developed from all available records, the Interagency Task Force (ITF) Report on Hazardous Waste (1978) and additional information.

INORGANICS[1]

"Black Cake"[2]	19,760 cubic yards
Graphite	742 tons
Concrete	6,625 tons
Flyash	5,472 truckloads
Lime Sludge	22,695 cubic yards
Brine Sludge	15,899 cubic yards

ORGANICS[3]

Benzene Hexachloride (BHC) Trichlorophenol (TCP) Trichlorobenzene (TCB) and Benzene	295 truckloads
V-Tetrachlorobenzene	310,550 gallons

(1) Disposal quantities of inorganic were generally based on production factors rather than actual recorded amounts. Inorganics can roughly be translated to tonnages through the use of the conversion factors. Estimated tonnages are as follows:

"Black Cake"	18,673 tons
Graphite	742 tons
Concrete	6,625 tons
Lime Sludge	22,978 tons
Brine Sludge	67,186 tons
	116,204 tons (excluding flyash)

(2) "Black Cake" resulted from the production of sodium chlorite and had a dry basis composition approximately as follows:

Approximately 2% soluble material (sodium chloride, sodium chlorite, sodium chlorate)

18% carbon

80% calcium carbonate/calcium hydroxide

TABLE 1.2

OLIN CORPORATION CHEMICAL INVENTORY
102ND STREET LANDFILL SITE

(3) Available records indicate truckload shipments of these materials to the landfill. There is no way to determine the specific quantities of the different chemicals, however, there is also no reason to believe they constitute a mixture. Rather, it is believed they were simply loads of some bulk and some drummed material on the same truck. Tetrachlorobenzene is a separate known quantity. Trichloroanisole was a probable impurity in one of the production processes. It was not disposed of as a separate item.

All the organic materials are solids at STP except benzene and 1,2,4-trichlorobenzene. The quantity of benzene and 1,2,4-trichlorobenzene (if the 1,2,4-isomer was disposed of at the site) are unknown.

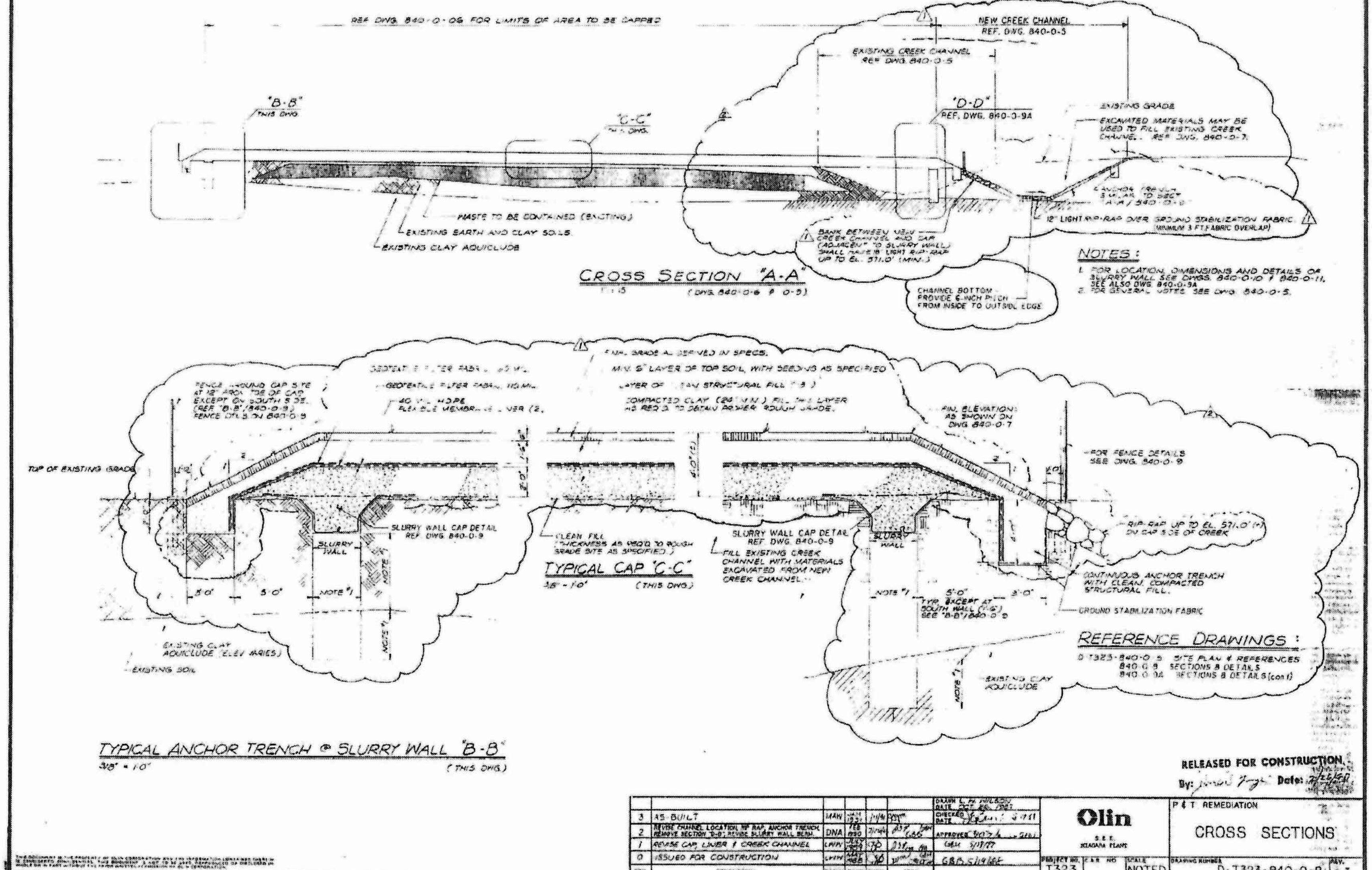
The organic disposal can roughly be translated to tonnages through use of the conversion factors of eight cubic yards per truckload and a density of 0.85 grams per cubic centimer (g/cc). Tetrachlorobenzene has a density of 1.8 g/cc.

BHC, TCP, TCB and Benzene	2,000 tons
Tetrachlorobenzene	2,327 tons
	4,327 tons

** Previously submitted with the Work Plan approved by the United States District Court for the Western District of New York in 1984.

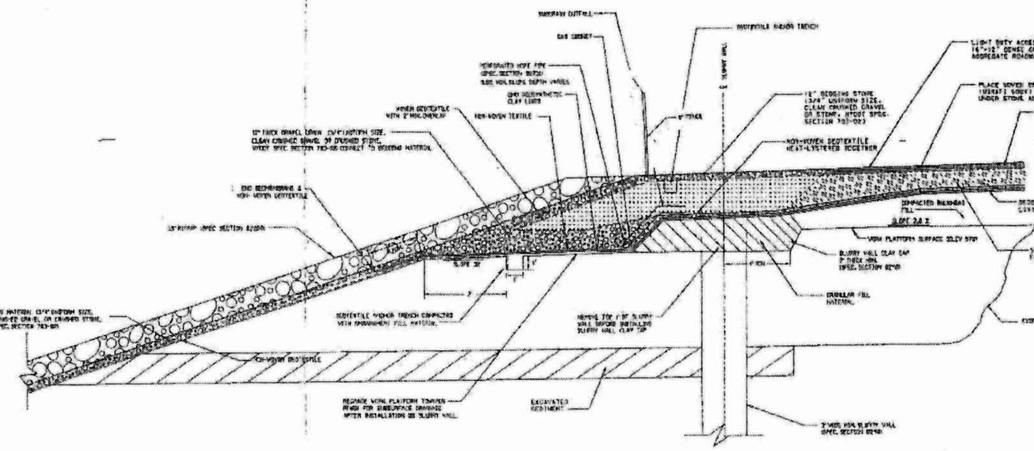
EXHIBIT N

D-T323-840-0-8



REF. DWG. 840-0-06 FOR LIMITS OF AREA TO BE CAPPED
NEW CREEK CHANNEL
REF. DWG. 840-0-5
EXISTING CREEK CHANNEL
REF. DWG. 840-0-5
"B-B"
THIS DWG.
"C-C"
THIS DWG.
"D-D"
REF. DWG. 840-0-9A
EXISTING GRADE
EXCAVATED MATERIALS MAY BE USED TO FILL EXISTING CREEK CHANNEL. REF. DWG. 840-0-7.
WASTE TO BE CONTAINED (EXISTING)
EXISTING EARTH AND CLAY SOILS
EXISTING CLAY AQUICLUDE
12" LIGHT RIP-RAP OVER GROUND STABILIZATION FABRIC
(MINIMUM 3 FT. FABRIC OVERLAP)
CROSS SECTION "A-A"
(DWG. 840-0-6 & 0-5)
CHANNEL BOTTOM - PROVIDE 6-INCH PITCH FROM INSIDE TO OUTSIDE EDGE
NOTES:
1. FOR LOCATION, DIMENSIONS AND DETAILS OF SLURRY WALL SEE DWGS. 840-0-10 & 840-0-11. SEE ALSO DWG. 840-0-9A
2. FOR GENERAL NOTES SEE DWG. 840-0-5.
MIN. 6" LAYER OF TOP SOIL, WITH SEEDING AS SPECIFIED
COMPACTED CLAY (24" MIN.) FILL THIS LAYER
TOP OF EXISTING GRADE
FIN. ELEVATION: AS SHOWN ON DWG. 840-0-7
FOR FENCE DETAILS SEE DWG. 840-0-9
SLURRY WALL CAP DETAIL
REF. DWG. 840-0-9
SLURRY WALL
CLEAN FILL
TYPICAL CAP "C-C"
3/8" = 1'-0"
(THIS DWG.)
FILL EXISTING CREEK CHANNEL WITH MATERIALS EXCAVATED FROM NEW CREEK CHANNEL.
RIP-RAP UP TO EL. 571.0' (+) ON CAP SIDE OF CREEK
CONTINUOUS ANCHOR TRENCH WITH CLEAN, COMPACTED STRUCTURAL FILL.
GROUND STABILIZATION FABRIC
REFERENCE DRAWINGS:
D-T323-840-0-5 SITE PLAN & REFERENCES
840-0-9 SECTIONS & DETAILS
840-0-9A SECTIONS & DETAILS (con't)
EXISTING CLAY AQUICLUDE (ELEV. VARIES)
EXISTING SOIL
EXISTING CLAY AQUICLUDE
TYPICAL ANCHOR TRENCH @ SLURRY WALL "B-B"
3/8" = 1'-0"
(THIS DWG.)
RELEASED FOR CONSTRUCTION
By: Date:
3 AS-BUILT
2 REVISE CHANNEL LOCATION, RIP RAP, ANCHOR TRENCH, REMOVE SECTION "D-D", REVISE SLURRY WALL BERM.
1 REVISE CAP, LINER & CREEK CHANNEL
0 ISSUED FOR CONSTRUCTION
REV. DESCRIPTION DRAWN DATE CHKD. APPR.
Olin
S.E.E.
NIAGARA PLANT
P & T REMEDIATION
CROSS SECTIONS
PROJECT NO. T323
SCALE NOTED
DRAWING NUMBER D-T323-840-0-8
REV. 3

EXHIBIT O



TYPICAL BULKHEAD DETAIL

N.T.S.

GENERAL NOTES

1. FIELD INSTALLATION AND TESTING OF GEOSYNTHETIC LAYERS SHALL BE AS RECOMMENDED BY THEIR RESPECTIVE MANUFACTURER(S) AND APPROVED BY THE CONSTRUCTION MANAGER. THE GEOSYNTHETIC LAYERS SHALL BE INSTALLED BY AN EXPERIENCED INSTALLER. ALL SUBMITTALS AND RESULTS OF TESTING DATA SHALL BE APPROVED BY THE CONSTRUCTION MANAGER PRIOR TO ANY MATERIALS ARRIVING ON THE SITE.

2. THE CONTRACTOR SHALL SUBMIT A QUALITY CONTROL AND FIELD TESTING PLAN INCLUDING APPROPRIATE ASTM STANDARD METHODS AS RECOMMENDED BY THE GEOSYNTHETIC MANUFACTURER(S) FOR THE CONSTRUCTION MANAGERS APPROVAL.

3. THE WOVEN GEOTEXTILE ON BULKHEAD SHALL BE MIRAFI 700X.

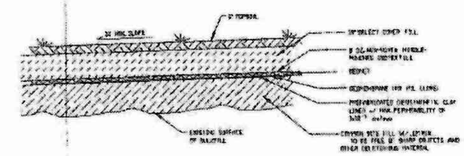
4. THE NON-WOVEN GEOTEXTILE SHALL BE EVERGREEN TECHNOLOGIES TG 700.

5. THE GEONET SHALL BE NATIONAL SEAL COMPANY POLY-NET 2000 OR EQUIVALENT HAVING A MINIMUM TRANSMISSIVITY OF 0.21×10^{-3} SQUARE METERS PER SECOND FOR EACH FOOT OF WIDTH FOR ALL SLOPES.

6. THE GEOMEMBRANE SHALL BE A MINIMUM 40 MIL THICK LLDPE. THE GEOMEMBRANE SHALL BE NATIONAL SEAL COMPANY LLDPE.

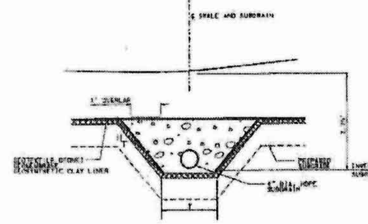
7. THE GEOSYNTHETIC CLAY LINER SHALL BE CLAYMAX 200R.

8. THE GEOSYNTHETIC CLAY LINER ON SLOPES GREATER THAN 10% SHALL BE BENTOMAT ST.



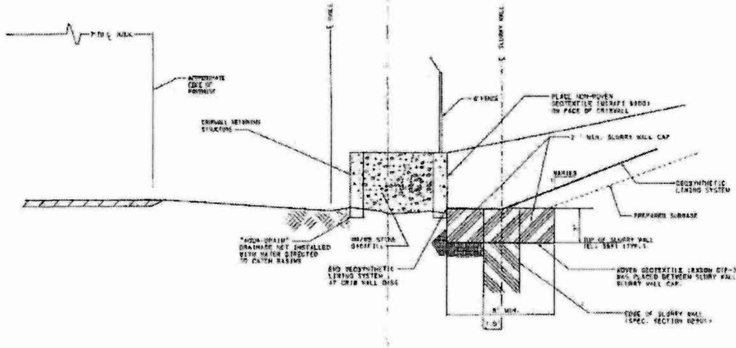
TYPICAL CAP DETAIL

N.T.S.



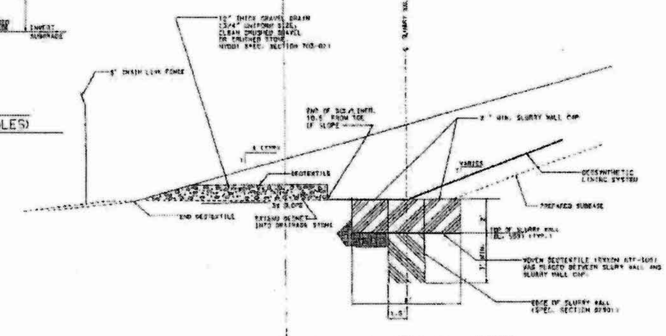
DRAINAGE TRENCH DETAIL
(TYPICAL BELOW ALL SURFACE SWALES)

N.T.S.



TYPICAL LANDFILL/SLURRY WALL DETAIL
TOE AT BUFFALO AVENUE

N.T.S.



TYPICAL LANDFILL/SLURRY WALL DETAIL

N.T.S.

FLUOR DANIEL

OXYCHEM / OLIN
REMEDIAL DESIGN
102nd STREET LANDFILL SITE
NIAGARA FALLS, NEW YORK

AS-BUILT
CAPPING SYSTEM AND BULKHEAD
SECTION AND DETAILS

AS NOTED | 594000-105-02 | 1